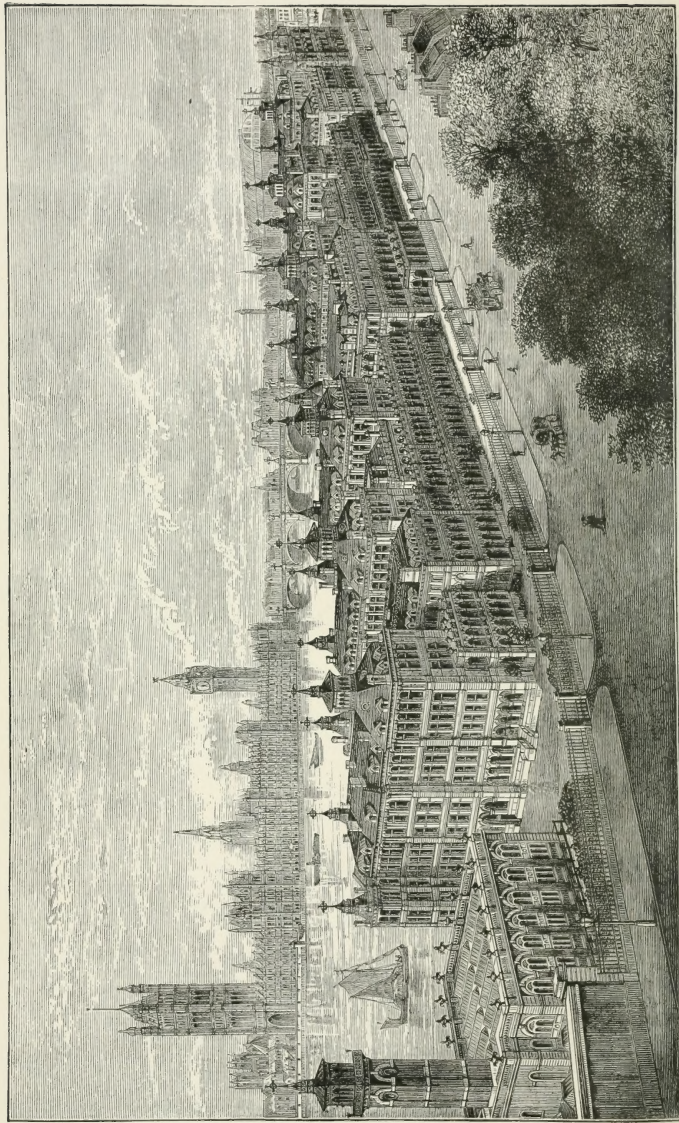






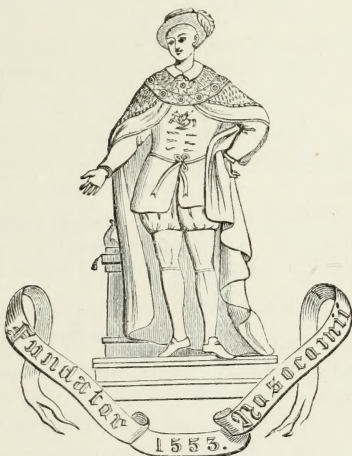
VIEW OF ST. THOMAS'S HOSPITAL FROM THE SOUTH-EAST.

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CONTENTS.

	PAGE
In Memoriam: George Gulliver . . .	xvii
I. The Influenza Epidemic of 1890. By H. P. HAWKINS, M.A., M.B., M.R.C.P. . . .	1
II. On a Case of Total Transverse Lesion in the Upper Dorsal Region of the Cord. By J. MICHELL CLARKE, M.A., M.B., M.R.C.P. . . .	23
III. Sixty-four Cases of Non-Strangulated Hernia treated by Radical Cure. By HENRY BETHAM ROBINSON, M.D., M.S., F.R.C.S. . . .	33
IV. Hydatid Cyst between Bladder and Rectum. Reten- tion of Urine; Surgical Kidneys; Death. Reported by JOHN R. LUNN, F.R.C.S.Ed. . . .	57
V. Report on a Sample of Condensed Milk. By ALBERT J. BERNAYS, Ph.D. . . .	61
VI. Intubation of the Larynx. A Thesis for the Degree of M.D. in the University of Oxford. By W. W. ORD, M.A., M.D., M.R.C.P. . . .	65
VII. Dangers of Intubation in Diphtheria. By H. G. TURNER, M.A., M.B., M.Ch., M.R.C.P. . . .	85
VIII. The Treatment of Erysipelas by Hypodermic Injec- tion. By LEONARD A. BIDWELL, F.R.C.S. . . .	97
IX. Remarks on the Radical Cure of Hernia. By Sir WILLIAM MACCORMAC, M.A., M.Ch., F.R.C.S. . . .	107

	PAGE
X. Clinical Instruction at Fever Hospitals. By EDWARD SEATON, M.D., F.R.C.P.	117
XI. Recent Cases of Myxœdema. By W. M. ORD, M.D., F.R.C.P.	125
XII. Report of the In-patient Department for Diseases of Women for the year 1889. By CHARLES J. CULLINGWORTH, M.D., F.R.C.P.	137
XIII. Forty-one Fatal Cases of Acute Infective Osteo- Myelitis, terminating with Pyæmic Symptoms, contrasted with Two Hundred Cases of Ordinary Pyæmia. By G. H. MAKINS, F.R.C.S., and F. C. ABBOTT, B.S.	193
XIV. Seven Consecutive Cases of Operation for Injury to the Cranial Vault. By WILLIAM HENRY BATTLE, F.R.C.S.	219
XV. Cranio-Tabes in Young Children. A Clinical Inquiry into its Origin. Illustrated by 100 Cases. By GEORGE CARPENTER, M.D., M.R.C.P.	235
XVI. An Anatomical Note upon the Relation of the Internal Carotid Artery to the Inner Wall of the Tympanum. By WILLIAM ANDERSON, F.R.C.S.	243
XVII. An Analysis of 708 Cases of Acute Pneumonia, admitted to St. Thomas's Hospital during the Eleven Years from 1880 to 1890 inclusive. By W. B. HADDEN, M.D., F.R.C.P., HECTOR W. G. MACKENZIE, M.D., M.R.C.P., and W. W. ORD, M.D., M.R.C.P.	247
XVIII. Experimental Observations on the Brain of the Monkey. By W. B. HADDEN, M.D., F.R.C.P., and C. A. BALLANCE, M.S., F.R.C.S.	273
XIX. Umbilical Polypi. By W. HEPTINSTALL MILLAR, M.R.C.S., L.R.C.P.	279
XX. Three Cases of Septic Poisoning of Obscure Origin. By FREDERICK POLLARD, M.D.	285
XXI. Report of the Aural Department for the year 1889. By RICHARD LAKE, F.R.C.S., Clinical Assistant	291

XXII. Report of the Department for Diseases of the Skin, 1889. By H. C. Low, M.A., M.B., B.C., and A. J. ADKINS, L.R.C.P., M.R.C.S., Clinical Assistants	295
XXIII. Report of the Midwifery Department for 1889. By ROBERT CORY, M.A., M.D., F.R.C.P.	305
XXIV. Medical Report, 1889. By HECTOR W. G. MAC- KENZIE, M.A., M.D., M.R.C.P.	321
XXV. Surgical Report, 1889. By E. SOLLY, M.B., F.R.C.S.	355
XXVI. Statistical Report of the Ophthalmic Department for the Year 1889. By W. G. LAWS, M.B., C.M.	453
XXVII. Calendar of St. Thomas's Hospital, Session 1890-91	

LIST OF ILLUSTRATIONS.

PLATES.

PLATE	TO FACE PAGE
I. <i>Illustrating Dr. Michell Clarke's paper on Total Transverse Lesion in the Upper Dorsal Region of the Cord</i>	32
II. <i>Illustrating Dr. Ord's paper on Recent Cases of Myxædema</i>	136
III and IV. <i>Illustrating paper on Acute Pneumonia by Drs. Hadden, Mackenzie, and W. W. Ord</i>	272
Chart I shows the relation between the number of cases and the mortality per cent. at each period of life.	
Chart II shows the onset at the various periods of the year and the mortality per cent.	
Chart III shows the number of cases in each year, with the mortality per cent. for the year.	
V and VI. <i>Illustrating paper on Experimental Observations on the Brain of the Monkey by Dr. Hadden and Mr. Ballance</i>	286
Figs. 1, 2, 3, 4, and 6.—Right hemisphere of the brain of the monkey (<i>Macacus Sinicus</i>)	
Fig. 5.—Internal aspect of right hemisphere.	
VII. <i>Illustrating Mr. Richard Lake's Report of the Aural Department</i>	302

WOODCUTS.

	PAGE
<i>Illustrating Dr. Hawkins's paper on Influenza.</i>	
Chart 1.—Showing temperature . . .	6
Charts 2 and 3.— Ditto. . . .	9
Chart 4. . . . Ditto. . . .	10
Chart 5. . . . Ditto. . . .	11
Chart 6. . . . Ditto. . . .	12
<i>Illustrating Dr. W. W. Ord's paper on Intubation of the Larynx.</i>	
Diagram showing method of introducing the tube	68
Modified introducer (half size)	69
<i>Illustrating Dr. Turney's paper on Dangers of Intubation in Diphtheria.</i>	
Ulceration of larynx and trachea	90
Ditto. . . . ditto. . . .	93
<i>Illustrating paper by Mr. Makins and Mr. Abbott on Acute Infective Osteo-Myelitis.</i>	
Curve showing proportional monthly frequency of occurrence of pyæmia and acute infective myelitis during the year . . .	202
<i>Illustrating Mr. Anderson's paper on Relation of Internal Carotid Artery to Inner Wall of Tympanum.</i>	
Diagram of inner wall of tympanum . . .	244
Section of temporal bone showing relation of tympanum to carotid canal	245



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In Memoriam.

GEORGE GULLIVER.

THE year 1891 commenced very sadly for St. Thomas's. George Gulliver, after a few days' illness, was taken from us on January 11th. He began the year in full health and vigour, and it was very difficult for his friends to realise that he had fallen so suddenly a victim to acute pneumonia.

The Hospital Reports would indeed be incomplete without a record of one who was so promising a member of the hospital staff, and who was so loved and esteemed by all who knew him, and who was also one of the editors of these Reports for the three years 1885, 1886, and 1887.

The obituary notices by Dr. Sharkey in the 'Lancet' of January 24th, and Dr. Hadden in the 'British Medical Journal' of the same date are so complete, and give such a faithful outline of Gulliver's life and work, that the writer of this notice feels he cannot do better than to try and combine them, giving such brief additions as may seem in place when the record is specially for St. Thomas's men.

George Gulliver was born at Windsor in 1851. He was the only son of the late George Gulliver, F.R.S., the celebrated naturalist, who was Professor of Anatomy and Physiology at the Royal College of Surgeons, at one time Surgeon to the Royal Horse Guards, and who was specially distinguished for his classical researches on the blood-lymph and chyle, and contributed largely to various branches of natural history.

George Gulliver, jun., was educated at the King's School,

Canterbury, whence he proceeded to Pembroke College, Oxford. Inheriting his father's love of science and specially of biology, he selected the latter subject for his degree examination, and became a pupil and admirer of the late Professor Rolleston. In 1873 he graduated in the 1st class in the Natural Science School, and was soon after appointed Demonstrator to Professor Rolleston, who had previously shown the high opinion he had of Gulliver's character and ability by obtaining for him the post of Assistant Naturalist to the Transit of Venus Expedition. In this capacity Gulliver spent some months at Rodriguez, and on his return contributed to the 'Philosophical Transactions' a Report on the Zoology of the Island of Rodriguez, for which he received the thanks of the Royal Society.

He entered St. Thomas's Hospital as a student in 1875, and in 1879 he took the degrees of M.A. and M.B. in the University of Oxford, and the Membership of the Royal College of Surgeons. Directly after obtaining these medical qualifications, he served as Clinical Assistant to the Hospital for Consumption at Brompton, and to the City of London Hospital for Diseases of the Chest. During his student's career he had made his mark as a man of considerable ability and promise, and in 1880 was elected to the office of Resident Assistant Physician at St. Thomas's; he held this post, together with that of Medical Registrar, for two years. He then took the M.R.C.P., and a vacancy in 1882 occurring on the Medical Staff of the Hospital, he was appointed Assistant Physician. In 1883, when the cholera was rife in Egypt, he was sent out by the Foreign Office, and attached to the Ibrahim Pacha Hospital at Cairo; but later, at his own request, he was transferred to Assouan to carry out whatever sanitary measures he might think necessary. While there, his dragoman was attacked with cholera, and Gulliver, who was the only European on the spot, nursed him successfully through his illness, sleeping in the same room with him. When the epidemic subsided he returned to London, and read a valuable paper on the 'Etiology and Pathology of Cholera' before the Epidemiological Society.

In 1884, when Mr. C. Stewart was appointed Curator to

the Royal College of Surgeons, Gulliver was made Lecturer on Comparative Anatomy at St. Thomas's, and subsequently a Demonstrator of Morbid Anatomy, appointments which he still held at the time of his death. In 1886 he became a Fellow of the College of Physicians. In addition to the posts he held at his own Hospital, Gulliver was in 1883 appointed Assistant Physician to the London Fever Hospital, and in 1889 became Physician. A few weeks before his death he had agreed, at the request of a firm of publishers, to write a treatise on Fevers, a task for which his experience at the London Fever Hospital, and his lucid style of writing, specially fitted him.

Gulliver was a member of various Medical and Scientific Societies, at which he read from time to time papers of considerable value. Amongst his writing may be mentioned "Syphilitic Ulceration of Trachea," "Cysticerci of Brain," "Malignant Growth of Thyroid in Myxœdema," which appeared in 'Transactions of the Pathological Society.' To the 'St. Thomas's Hospital Reports' he contributed the 'Statistical Medical Reports' for 1880 and 1881, and papers on "Ulcerative Endocarditis after Acute Pneumonia," and "Gangrene of the Lung." In 1888 he contributed a paper on "The Structure of *Pelomyxapelustris*" to the 'Journal of the Royal Microscopical Society.'

Gulliver, who was a thoroughly practical and well read physician, was considerate and kind to his patients, and to all who were associated with him in his professional work. Gifted with great natural ability and sound judgment, he was singularly rapid and correct in forming an opinion about a difficult case. To those who did not know him well, it might often appear in a consultation that he was paying but slight attention to the statements of the patient, or to the observations of those who had watched the case, and it was only on reviewing the whole matter subsequently that they would find out how keenly he had noted all points of real importance for the diagnosis, and how carefully he had been weighing the evidence before him.

As a teacher, his quiet and reserved manner made it difficult for any large number of students in the out-patient room to follow his practice. He took, however, considerable

delight in his systematic lectures and in individual teaching ; and his clear and cultivated manner of expression, and the keen sense of humour which he so often displayed made his remarks exceedingly interesting and instructive.

In addition to his professional and scientific accomplishments, Gulliver had a large acquaintance with English and French literature, and was well informed on most questions of general interest. The opinions he formed were generally very decided, and he would defend them with vigour and considerable tenacity.

To those who knew him well, he was an invaluable companion and a staunch friend. Of a hospitable disposition, he never seemed so happy as when entertaining his friends, and many who had no direct claim upon him have found him a warm and helpful friend when in difficulty. His mother, who is over eighty years of age, lived with him in Welbeck Street, and by his death she has lost her constant and devoted companion.

Gulliver was a very regular attendant at the Savile Club, and well known to many of the members. Within the last year he had been elected a member of the Athenæum Club.

Of medium height and spare build, he led rather a sedentary life in London, but when in the country for a holiday, he delighted in long walks, and in the summer at every opportunity indulged in his favourite pastime of swimming. His shortness of sight prevented him from taking part in most forms of sport.

As a youth he was made by his father a Fellow of the Zoological Society. On many Sundays in the year, both winter and summer, he would spend several hours in the Gardens studying the habits of the various animals ; and was a most instructive and entertaining guide to those of his friends who accompanied him.

He was taken suddenly ill on January 3rd, and there is little doubt that the malady was due to the extreme severity of the weather. It was soon apparent that the disease was acute pneumonia, and to this he succumbed on January 11th, the eighth day from the onset. He was buried by the side of his father in the ancient churchyard of Nackington, a hamlet near Canterbury.—B. P.

THE INFLUENZA EPIDEMIC OF 1890.

By H. P. HAWKINS, M.A., M.B.,
RESIDENT ASSISTANT PHYSICIAN.

ANY contribution to the vast literature of influenza must be conceived in an apologetic frame of mind. The epidemic of 1890 has been followed by a shower of papers, pamphlets, and books, mingled with records of isolated cases in every available publication, so that a student might be pardoned for supposing that in influenza, at any rate, he had met with a disease of which our knowledge is complete.

I believe, however, that we have gleaned nothing from this epidemic, save a more accurate knowledge of the rise of temperature, which we owe to the use of the clinical thermometer, and that we know less of the cause and origin than in the case of any other specific fever.

Influenza has always exercised a strange fascination upon those who come in contact with it, and the secret of this fascination confessedly lies in our own ignorance of the subject. Nothing is wanting to invest it with surpassing interest. The mystery of its origin, the suddenness of its appearance, and the rapidity with which it overruns a continent or the entire world, place it somewhat apart from the other specific fevers. Its total disappearance for so long a space of time that its very name becomes degraded and misapplied, and its sudden reappearance, possessing all its old characters and running a course in no way modified or disturbed either by

the improvements in sanitation or by the new theories of disease which have accrued in its absence, make it a very fitting subject for reflection.

At any rate, it does not seem right that an epidemic which so largely affected our hospital should be allowed to pass beyond our memory without comment; and in this view an endeavour is made to set forth the main features of the disease as it was seen at this hospital, in a bare report, which shall make but scanty reference to the work of others, and shall include only such generalisations as lie upon the surface of the mass of facts.

I beg to thank the physicians, under whose care the in-patients were placed, for their permission to make this report.

Number of Cases seen.

The first cases at this hospital were recognised in the week ending on December 29th, 1889. The epidemic rapidly acquired impetus, and reached its highest point in the second week of January, 1890: from this time it showed a gradual abatement, and may be said to have ceased at the end of February, though 8 cases were seen here in March, 24 in April, and a few in July and August.

The average weekly number of patients applying for our 140 weekly out-patient letters is 306. In the week ending on January 11th the number of applicants was 913, in the next week 807, and the normal was not reached till the end of February.

In all, 1390 patients suffering from influenza applied for treatment—1043 males, 347 females and children. Of this number, 82 were admitted (for the most part into special wards)—66 males and 16 females; of these 82 in-patients, 8 (males) died.

Of these 1390 patients, 846 applied in the first two weeks of January. Those who presented themselves suffering merely from consecutive anæmia or debility are not included in these figures.

All classes of the hospital population suffered to some extent, viz.—

Sisters and nurses . .	22	out of 105
Probationers . . .	9	„ 35
Medical residents . .	7	„ 9
Non-medical residents . .	7	„ 11
Wardmaids, &c. . .	11	„ 27
Porters . . .	12	
		—
Total	68	

Of the patients in the general wards (daily average about 360), 34 acquired it.

Thus about 1500 cases were seen, and in 172 of these the course of the disease could be watched at the bedside. In the following account all these 1500 cases are utilised, and when the frequency of any symptom is given numerically this whole number is referred to, unless it is otherwise stated.

Description of a Common Case.

Owing to the wide range of symptoms (wider, perhaps, than in any other specific fever), and the inconstancy of those symptoms which more particularly attract attention, description is difficult, and apt to degenerate into a mere tabulation of phenomena which is not well fitted to present a clear picture of the disease. The following account is one which will cover a large majority of the cases seen, but that it falls far short of a complete description of influenza will be subsequently shown.

The patient is suddenly seized with shivering or alternate feelings of heat and cold, his back and legs begin to ache, his head grows heavy and his forehead may throb, while he not uncommonly vomits; in a few hours he looks and feels extremely ill. If taken ill in the morning he may endeavour to perform his daily work, and may in a manner succeed, but more commonly he quickly realises defeat and betakes himself to bed.

The pain in his head becomes severe, it may be more severe than any pain he has ever felt before; for the dull aching in his back and legs he is constantly seeking ease by change of position, and in spite of the fever which is now upon him he cannot get warm. After twenty-four hours or less his eyes

may begin to water and smart, or may merely become blood-shot, while the eyeballs themselves become tender, and are the seat of just such an aching as he has previously felt in his back. His nose, at first stopped up, begins to discharge freely, and his throat may become dry and sore.

From the very first he may suffer from pain and tightness in the chest, with a troublesome objectless cough; but more commonly cough sets in about the third or fourth day, and is attended with watery sputum, which may on occasions be blood-streaked.

The temperature, which in the first twenty-four hours will reach 102° or 104° , falls to the normal in two to four days. The tongue is pale, flabby, and furred, but moist; the appetite is lost, and the bowels are usually confined, though occasionally there is a sharp attack of diarrhoea. The pulse is seldom much accelerated in spite of the fever, and is commonly diminished in strength and volume. Prostration and muscular weakness are marked features throughout the illness.

The limb-pains pass away, the headache leaves him gradually, he shakes off the nasal catarrh, and the first stage of the illness is over. About the fourth or fifth day he emerges from seclusion, pale, feeble, and irritable, as unfitted for mental as for bodily work, and as giddy as a convalescent from a month of typhoid. For a few days more he retains his cough, and perhaps can still feel pain on breathing deeply; recovery of the appetite for food and tobacco is delayed, and for two or three weeks more he is liable to severe neuralgia.

Such an illness as this is the commonest form of influenza; many cases are slighter, a few are more severe. It only remains to add that at every point of his illness from the first day to the last the patient has been liable to an extension of inflammation from the upper part of the respiratory tract to the smaller air-tubes and air-cells, from which if a man escape with his life, let him call himself fortunate.

Varieties of Influenza.

Now in this account there is no one symptom (save probably the rise of temperature) which may not be absent from first to last. At the same time any one symptom may assume such

predominance as to give a different character to the illness, and even obscure the diagnosis; and these cases in which one symptom throws all others into shade fall naturally into four classes, according as (1) fever or (2) pulmonary affection or (3) pain or (4) disturbance of the digestive system becomes the leading feature.

Other specific fevers are open to similar subdivision into varieties, each marked by some one prominent point, such varieties being linked together by some constant pathological lesion, as in typhoid fever, or by some constant objective feature, as in scarlet fever and measles. But in influenza we have neither coarse lesion nor rash, and nothing constant save rise of temperature; so that, if we would find a connecting link between its several varieties, we must fall back upon mere "simultaneity of occurrence."

In fact, so much do these varieties of influenza differ, and so far apart do extreme instances lie, that they would never be grouped together nor be recognised as parts of the same disease were not their identity indicated by their simultaneous occurrence in the course of an epidemic, and by the frequent occurrence of intermediate cases, the symptoms of which are drawn from each variety.

Of these four varieties the following cases are instances:

(1) *Febrile form*.—Case 1. R. B. W—, æt. 23.

December 22nd, 1889.—He was playing whist and feeling quite well, when his head suddenly became hot, and he felt giddy and feverish; he fanned himself, and then felt cold. Later in the day headache came on, his back and legs began to ache, and he lost his appetite.

23rd.—He was restless last night and obtained no sleep; was sick once. In the morning the headache continued, but the limb-pains had nearly left him; his throat felt rather dry, but there was no catarrh of eyes or nose; his tongue was covered with thin, white, plastered fur, flabby and moist, and he could take no food. Bowels confined. Temp. 105°.

24th.—He had a much better night, during which his temperature fell to 99°. Headache only slight, no sweating, no return of appetite.

25th.—No pain anywhere; began to take solid food.

High fever, frontal headache, aching of back and legs, loss of appetite, and constipation are the chief features here; there was at no time any affection of eyes, nose, or lungs, and notwithstanding the high temperature his condition was far from

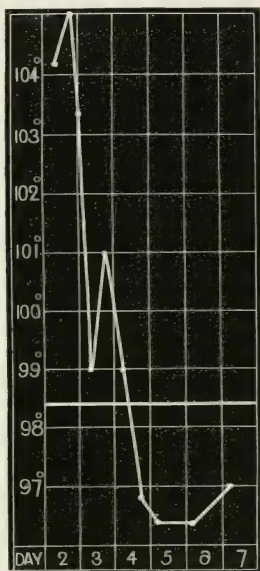


CHART 1.—Case 1.

alarming. Compare this with Case 2, where in an equally healthy individual the brunt of the attack falls on the lungs, the illness is of three weeks' duration, and life is for some time endangered.

(2) *Pulmonary form.*—Case 2. C. H—, æt. 28.

January 2nd.—He was suddenly seized in the morning with violent shivering, followed by sweating and pain in the forehead, back, and limbs. In a few hours he was obliged to give up work and go to bed; in the evening he lost his voice,

3rd.—Sick several times; pains and sweating continued; cough began; bowels confined.

4th.—He was admitted in a collapsed condition. His voice was hoarse, his hands tremulous, and his pulse (92) very feeble; his lungs were full of rhonchi, his breathing was laboured, his tongue thickly furred, and his temperature over 104° . There was no catarrh of eye or nose.

His temperature fell in the usual manner and the pains disappeared, but for three weeks his bronchitis was severe and the event was doubtful. On several occasions the profuse bronchitic sputum contained streaks and small clots of red blood.

(3) *Painful form.*—Case 3. A. A—, æt. 29.

January 4th.—He was suddenly seized with frontal headache, pain in the back, and general malaise, but went through his day's work as a grocer.

5th.—Headache continued; he felt chilly at times, but attended to his work all day.

6th.—Headache increasing and becoming more general.

7th.—The intense pain, mostly in the forehead but felt also about the occiput and down the back of the neck, made him at last take refuge in bed.

The next three days he spent in bed, suffering pain the like of which he had not before realised, and completely sleepless.

11th.—On admission there could be no doubt as to the severity of the headache. The tongue was thickly furred, the pulse was 110, and a few rhonchi were audible in the chest; the temperature was 101° and then became normal. The bowels had been confined throughout. There had been no affection of eyes or nose, no vomiting, and no shivering.

After a week's stay he left the hospital free from pain, but pale, weak, and thin.

(4) *Gastro-intestinal form.*—Vomiting or diarrhœa or both may be the chief feature of the illness; this is by no means common, but it occurred in a sufficient number of cases to deserve separate mention.

Case 4. G. A—, æt. 21.

December 31st.—He was suddenly attacked with severe frontal headache, pain in the back and epigastrium, repeated sneezing, running from the eyes, and vomiting.

For the next six days this patient suffered from frequent

vomiting and uncontrollable diarrhœa, the occurrence of which with continued fever aroused a suspicion of typhoid in the mind of his doctor.

Compare these cases. They certainly do not bear much resemblance to each other. But if we think that for one case of each of these varieties we meet with a dozen mixed cases, in which all or some of these leading features are blended in varying proportion, and if we think that such cases are pouring in shoals into the waiting-room of every London hospital every day for some three or four weeks, we gain some idea of the character and magnitude of an epidemic of influenza.

Symptoms in Detail.

Mode of invasion.—The onset may be said to be always sudden. In some cases it is startling in its rapidity and severity. A strong man on finishing a day of hard work in the Vauxhall gasworks was seized with vomiting, giddiness, weakness of the legs, and distressing breathlessness. When brought to the hospital a few hours later he was too feeble to stand and sweating profusely; his hands were cold and tremulous, his speech broken for want of breath, and his pulse scarcely perceptible at the wrist. One man was overtaken in the street, sought refuge in a shop, and had to be carried to his home; another was attacked while driving an omnibus, and could not sit upright to finish the journey; another was seized with a sudden sensation of falling, so that he lay down upon the ground and “panted like a dog.”

But in most cases, though the patient can state the exact time at which he was taken ill, the extremity of illness is not so quickly reached. Many with the courage of ignorance struggle on for a few days with their work, succumbing later to sheer weakness or bronchitis; and many no doubt pass through slight attacks without desisting from their occupation.

In a large majority of our cases (*e. g.* in 55 out of 70 out-patients taken at random) the illness was ushered in by chilliness and shivering or alternate feelings of heat and cold with headache, and aching of the back and legs, and sometimes of the eyeballs. A severe rigor was very uncommon.

Nausea or vomiting at the commencement was tolerably frequent (*e. g.* 30 out of 70), lachrymation and coryza (*e. g.* 10 out of 70) did not commonly occur in the first few hours, but cough (*e. g.* 23 out of 70) was met with more frequently.

In a few cases where shivering, headache, and limb-pains did not mark the actual onset, they were preceded for a few hours by such general symptoms as depression, languor, stupidity, giddiness, and muscular weakness. Sometimes what seemed at first to be an ordinary "cold in the head" was seen to pass into genuine influenza.

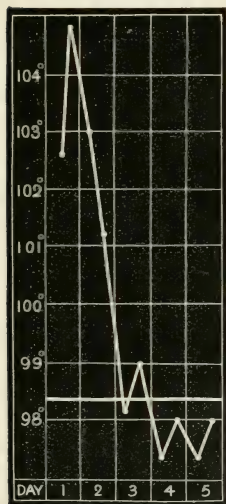


CHART 2.—Case 5. M. M—, æt. 21.

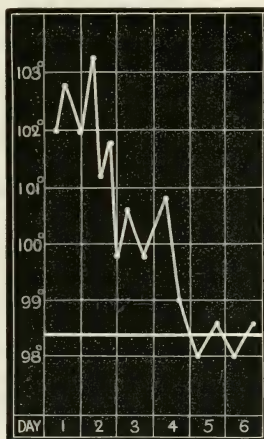


CHART 3.—Case 6. G. B—, æt. 21.

Temperature.—Influenza is a fever, not a catarrh. The fever may be slight and transitory, but if cases occur in which there is at no time any rise of temperature they must be exceedingly rare, and no such cases were met with in this hospital in a large number of observations made on the first day of illness. One cannot, however, speak with absolute certainty on this point, because the majority of our patients

did not present themselves till the second, third, or fourth day of illness, but even in these a normal temperature was not commonly found.

Taking uncomplicated cases, and so eliminating any symptomatic fever consequent on pulmonary inflammation, there is seen a rapid rise to 101° — 105° in the first twenty-four or thirty-six hours, followed by a defervescence occupying from one to four days; and I believe that the accompanying charts represent as nearly as may be the typical course of the fever of influenza (Cases 5 and 6).

If the fever is of longer continuance some pulmonary com-

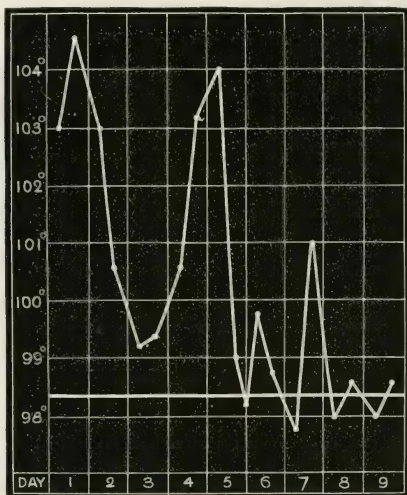


CHART 4.—Case 7. M. D—, æt. 20.

plication will be found to account for it. The curve of the essential fever may fuse with that characteristic of lobar pneumonia, or it may be drawn out and rendered irregular by the concurrence of bronchitis.

In some few cases, however, apart from any complication the form of the chart is modified, in so far as a secondary rise of temperature (not necessarily accompanied by fresh sym-

ptoms) occurs after an afebrile interval of one or two days, as in Case 7.

There appears to be no relation between the height of the temperature and the severity of the other symptoms; with a temperature of 105° one patient had nothing more than slight headache and backache; another, with temperature scarcely above normal, was moaning with pain and could not be comforted. Nor is there any fixed relation in point of time between the course of the fever and the progress of the other symptoms; the temperature may be already falling rapidly before the more distinctive signs of influenza have appeared,



CHART 5.—Case 8. P. I—, æt. 21.

as in Case 8: the temperature may be still well above normal when the headache and pains have disappeared, or it may already be subnormal before the general symptoms have begun to abate.

It is even probable that cases of influenza occur which can only be recognised by means of the thermometer, and which have in consequence escaped recognition in previous epidemics. Thus one of our house physicians (Case 9) at midday on

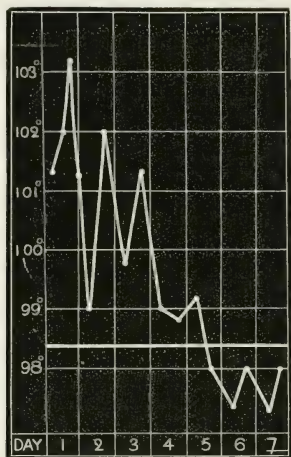


CHART 6.—Case 9. L. C—.

January 7th felt a sensation of cold down his back, and had the curiosity to take his temperature, which he found to be 101.4°. He took out-patient duty in the afternoon feeling "strange," but not ill, and his temperature was then 102°; after dinner it was 103.2°. His temperature did not become normal for four more days, but he never really felt ill, and at the worst had some pain in the left side of the head and left eyeball, while his left nostril was blocked and both conjunctivæ were slightly injected.

In fact, one is led to understand that fever is the one essential element in influenza, and that all other symptoms, pains, bronchitis, and the rest, while doubtless due to the same cause, are subordinate, variable, and in a certain sense accidental.

Eyes and nose.—The catarrh of eyes and nose, lachrymation, and coryza popularly associated with influenza were not

very commonly seen in this epidemic, and the eyes were more often affected than the nose. In 13 out of 70 out-patients taken at random, and in 24 out of 130 in-patients, one or both of these symptoms were present, but in many of these there was nothing more than injection of the conjunctiva.

In very few was the affection of the eye so marked as to attract the attention of the patient himself: but in one case there was sufficient conjunctivitis to produce photophobia; one man had some blepharitis, and "had to moisten his eyes with spittle to get them open;" some complained of smarting eyes, and some (with cedema of conjunctiva) of dimness of vision.

More common and more valuable in diagnosis was an aching of the eyeball, usually accompanied by tenderness and by pain on moving the eyeball to any extreme position. This symptom was present in 40 out of 130 cases; it was frequently an early symptom, and was equally severe whether conjunctivitis was present or not.

Respiratory tract.—The larynx was sometimes affected, as evidenced by huskiness or loss of voice, but no case of any great severity was met with.

It is difficult to estimate the percentage of those who suffer during or after an attack of influenza from some affection of the lungs, for, in utilising the number of patients who were under observation in the hospital from first to last, it must be remembered that more than half of these were admitted on account of the severity of the attack; but I do not think that the importance of this complication is exaggerated by saying that 50 or 60 per cent. develop a cough with or without some physical sign of disease in the lungs.

Taking 130 in-patients under accurate observation, 75 were thus affected; of these, 63 presented some physical signs of disease in the lungs, and 12 had simple cough which may be fairly attributed to inflammation of the trachea and larger air-tubes.

These 75, then, may be classed as follows:

(a) Forty-two had bronchitis; none died.

(b) Nine had crepitation over limited areas in one or both lungs. Whatever the exact pathological condition in such cases may be, whether "congestion of the lungs" be an

orthodox term or not, the crepitation had the character of that which is often heard over the bases in cardiac disease. Resonance was little if at all impaired over these areas.

One of these cases died, a man *æt.* 58, who had never had an illness before. Dr. Hadden's post-mortem report states that there was "marked *œdema* and congestion of both lungs, bronchi stained and empty, no pneumonia."

(c) Nine had rhonchi combined with patches of crepitation; none died.

(d) One had pleurisy with effusion requiring paracentesis.

(e) Fourteen had the signs of lobar pneumonia, of whom 7 (males) died—a very high rate of mortality.

The post-mortem reports were as follows:

(1) H. S—, *æt.* 21. Recent lymph on both layers of pericardium. Of the right lung, lower lobe was solid, partly red, partly grey; upper lobe was congested and friable: of the left lung, lower lobe was congested and *œdematous*, upper lobe congested and friable (Dr. Hadden).

(2) H. C—, *æt.* 28. Recent lymph on both pleuræ, especially the right. Nearly the whole of the right lung was consolidated, but its bulk was smaller, and the substance red, fleshy, and not granular, as if pneumonia had occurred in a previously collapsed lung (Dr. Gulliver).

(3) J. W—, *æt.* 45. Right pleural surface everywhere coated with tenacious lymph, and the cavity contained half a pint of turbid serum; left pleura also contained turbid serum and lymph. There was grey hepatisation of middle third of right lung, rest of the lung being intensely *œdematous*: the left lung was very *œdematous*, but not consolidated (Dr. Gulliver).

(4) T. M—, *æt.* 45. Much congestion of larynx, trachea, and larger bronchi. Both lungs were greatly congested and *œdematous*, and the lower half in both was solid, granular, and pink, but the consolidation was not so complete as is usually the case in acute lobar pneumonia. In fact, it was a case of separate pneumonic islets ranged close together, with unconsolidated lung between them: at the upper limits rather large islands passed into lung-tissue which was only hyperæmic and *œdematous* (Dr. Sharkey).

(5) G. H—, *æt.* 46. In left pleura half a pint of turbid yellow fluid, with a thick tough layer of lymph covering nearly

the whole of the back of the lung; on right pleura many patches of exudation. The lungs were collapsed in their extreme lower portions, and elsewhere, especially in left lower lobe, was some ill-defined consolidation without definite border (Dr. Gulliver).

(6) J. H—, æt. 50. Reddish-grey hepatisation of lower half of left upper lobe; left lower lobe much congested, friable, and nearly solid. Congestion and œdema of right lung (Dr. Hadden).

(7) J. K—, æt. 53. Upper lobe of right lung midway between red and grey hepatisation, with lymph on the surface; lower lobe of left lung showed typical grey hepatisation, with lymph on the surface (Dr. Hadden).

The duration of illness in these cases from the first symptom of influenza was ten, seven, eleven, seven, six, eight, and eight days respectively; all were healthy men, but four were more than moderate drinkers.

Digestive tract.—The appetite is much impaired. The tongue is pale and flabby, but often not so much furred as might be expected from the degree of illness; it is never dry unless the lungs are seriously affected.

Nausea or vomiting was fairly common at the onset of the illness, and in some cases the vomiting continued for several days. Epigastric pain was sometimes noted.

Diarrhœa was sometimes an urgent symptom, occurring at any time in the course of the illness, but obstinate constipation was far more common. Out of 130 in-patients, 58 required purgatives from the first, in 67 the bowels acted naturally, and in 5 diarrhœa required treatment.

Pain.—The various pains attached to influenza differ in character and probably in origin.

As regards the trunk and limbs, ill-defined aching in the lumbar region and in the muscles of the thighs and calves has been already mentioned as being a very common feature of the onset of influenza, and it probably differs only in degree from that which attends the onset of other specific fevers. It is a more severe form of the pleasurable aching which may be voluntarily acquired by unwonted exercise, and a student who was attacked by influenza during sleep thought in his half-waking condition that he had just finished

his first game of football. A cutting pain in the side on breathing deeply was very often observed, and over and over again one listened in vain for friction.

As regards the head, there can be distinguished (1) the general headache which attends the invasion of this as of other specific fevers, (2) the localised pain and heaviness over the eyes which is presumably due to affection of the frontal sinuses, and (3) the pain called neuralgic, whatever its nature may be.

Neuralgia is extremely common. In most cases it appears when the other symptoms have disappeared or are abating, but no one may consider himself beyond the reach of such pain for several weeks after an attack of influenza. The pain in the head may be general or limited to one orbit, one half of the forehead, one side of the face, or one half of the lower jaw. It may occur in megrim-like attacks of a few hours' duration, ceasing as suddenly and unexpectedly as it begins, or be drawn out into several days of agony.

The unilateral character of the pain is interesting, for it was by no means uncommon to meet with cases in which all the symptoms (save fever) were one-sided; one man aged 30 had a "grinding" pain in the right temple shooting into the right eye, discharge from the right eye and right nostril, and pain in the right side of his chest.

In one case severe pain in the distribution of the right infra-orbital nerve was accompanied by an eruption of herpes in the same area.

Throat.—Dryness and soreness of the throat was not uncommon, though in many who complained of this there was nothing abnormal to be seen. Reddening of the fauces was found in 14 out of 130 cases, but no swelling or exudation was observed in any undoubted case of influenza.

Spleen.—In 8 out of 80 in-patients the spleen could be satisfactorily felt, though it was never much enlarged; in 5 of these the temperature was high, in 3 it was only moderate, but all were otherwise severe cases. It must not, however, be concluded that the spleen can be felt in anything like 1 in 10 cases, for these 80 cases were picked out for their severity.

Pulse.—In uncomplicated cases the pulse was never much accelerated, seldom above 100, and sometimes it was decidedly

slow. In some severe cases, especially at the onset, it became extremely feeble.

Dyspnœa.—Breathlessness has been already mentioned as a rare but very striking feature of the onset of a severe attack. On looking round a room full of patients one could probably see a man panting, as if he had just run to the hospital, but no signs of disease would be found in his chest, and indeed there would have been no time for the development of pulmonary disease; one man was breathing fifty times in the minute within two hours of the onset. One cannot avoid attributing this symptom to some direct disturbance of the respiratory centre, such as might result from a circulating poison, and the slow pulse may possibly have a similar origin.

Hæmorrhages.—Epistaxis was by no means uncommon. Hæmoptysis not unfrequently occurred; 5 of the 42 cases of bronchitis mentioned above spat up red blood in varying amounts, but this also occurred in some patients who presented no physical signs of lung disease.

Urine.—The urine is febrile in character. In 10 out of 80 in-patients it contained albumen, but 7 of these had pneumonia.

The skin.—Sweating was very common all through the illness, but was especially marked during convalescence. Labial herpes apart from pneumonia was seen in not a few cases. Three or four had well-marked urticaria, and one man had a purpuric eruption covering the front of both legs. Nine cases had an erythematous rash, consisting of bluish-red slightly raised spots and patches, mostly on the arms and legs, aggregated about the back of the elbows and front of the knees, but sometimes also occurring on the chest and trunk. Two cases had erythema nodosum on the shins. Two lads complained of a feeling of stiffness about their hands and wrists, and in both cases there was vivid redness of the whole skin covering the hands and lower third of the forearms, and there seemed to be slight œdema over the backs of the hands. By inquiry and examination I am satisfied that no other affection of the skin occurred in our 1500 cases.

Special senses.—Many complained of the taste in their mouth, and used somewhat similar terms to express it, such as "coppery," "verdigris," "metallic." Though this may have been due simply to the condition of the tongue, it is possible

that it had another and remoter origin, for in several cases the senses of taste and smell were completely lost, and in one case they did not return for more than a week after the end of the attack.

The ears.—Severe earache was not uncommon; suppuration in the middle ear and perforation of the membrane was seen in five cases. This may very well be more common than would appear from these figures (5 in 1500 cases), for it was a sequela rather than a symptom of influenza, and patients would apply at the Ear Department or at the special hospitals for treatment.

Sequelæ.—A slow convalescence with attendant anæmia, muscular weakness, giddiness, and a tendency to fainting attacks was very commonly seen, and large numbers of patients came to the hospital for the first time in this condition. But beyond this general result of influenza one cannot point out any definite or common sequela, though doubtless an epidemic of influenza exercises a vast influence on the mental and bodily health of the population affected.

One has seen it precipitate hysteria and insanity in the unstable, for through the body it enfeebles the mind; and no one who saw much of the disease can forget its peculiar power in giving an edge to the temper and magnifying all the difficulties of life. It not only kills off the phthisical, but, as we can now see, it prepares the ground for the reception of disease. One patient who spat blood in his attack of influenza has done so repeatedly since; another, who has never felt well since his illness, now presents signs of disease at one apex; another lost a stone and a half in weight, has not regained it, and feels unfitted for work. Now, some six months after the epidemic, not a week elapses in which some such story is not heard.

To leave such general considerations, there is scarcely a disease which has not been imputed to influenza as a direct result. Let any disease succeed influenza with a reasonable interval, it matters not with what frequency nor how thickly the ordinary causes of that disease lie round us, let it only follow influenza, and in many minds direct causal connection is established. At the risk of falling into the same error, one cannot refrain from mentioning certain cases occurring

at this hospital, in which it was possible that influenza had some direct connection with after-coming ailments.

In two cases the limb-pains of influenza passed into the joint-pains of acute rheumatism. In one case acute nephritis appeared during convalescence, and in two cases venous thrombosis in one leg.

In one case on the seventh day of influenza acute purulent peritonitis set in, and the patient died a few hours after admission; at the post-mortem examination Dr. Sharkey could find no naked-eye cause.

Three cases of cerebral abscess, for which no cause was found after death, occurred, two under the care of Dr. Bristowe, the third under Dr. Sharkey. (1) C. M—, æt. 24, was just recovering from a week of influenza, when fits, hemiplegia, and drowsiness supervened; he was admitted on February 25th, after six weeks' illness, and died three days later. A large abscess was found to occupy the centre of the left cerebral hemisphere. (2) C. C—, æt. 14, had a mild attack of influenza towards the end of January. About the middle of March she began to complain of headache, which became more severe and was attended with vomiting in the first week of April; she was admitted on April 17th, and died suddenly two days later. A large and old abscess lay in the hinder part of the right occipital lobe. (3) J. W—, æt. 54, had influenza in February, came into hospital in August with a history of three months' vague illness, died almost at once, and was found to have an abscess in the left lobe of the cerebellum.

Mode of Propagation, Mortality, &c.

In his 'Geographical Pathology' Hirsch has summed up all the evidence relating to the origin and mode of diffusion of influenza, and his verdict is briefly as follows. Its genesis presupposes a wide-spread uniform and specific cause, the origin and nature of which are still completely shrouded in obscurity; be it a "fouling of the air" or a wind-borne organic poison, any theory may be true, but none has any basis of fact. All observations, negative and positive, tend to show that influenza is not communicable from man to man,

and all the observations which tend in the contrary direction, such as outbreaks in isolated places following the entrance of infected persons, break down on rigorous examination.

Notwithstanding the advance of bacteriology, this epidemic has, I believe, passed over us without yielding any addition to our knowledge of its origin and mode of spreading, and I saw nothing and heard of nothing which could make me doubt the main conclusions drawn by Hirsch ten years ago. The specific cause is still beyond our reach, but I suppose that most men have a firm belief in a specific micro-organism, and therewith are content, so that our present position is not greatly superior to that of the ignorant and enthusiastic people of 1665, looked upon with contempt by Defoe, who "talked of infection being carried on by the Air only, by carrying with it vast Numbers of Insects, and invisible Creatures, who enter into the Body with the Breath or even at the Pores with the Air, and there generate or emit most acute Poisons, or poisonous Ovæ or eggs, which mingle themselves with the blood and so infect the Body."

As to its mode of spreading, I confess to a leaning to the view that influenza is communicable from the infected to the non-infected by personal contact or by very close propinquity, while believing that this communicability has very little share in the spread of an epidemic. Some of the manufactories in this neighbourhood, where large numbers of men are employed, suffered severely, and no one could fail to be struck with the numerous instances where the bread-winner was taken ill at his work, and his return to a crowded home was speedily followed by the illness of every member of his family. A man was attacked at Oakey's Emery Works on December 30th, and was sent home: on December 31st his wife was taken ill; on January 1st his two daughters, who slept together; and on January 2nd his two sons, who also slept together. Such accounts were commonly heard, but it was at least equally common to find one member of a family affected, and one only.

Again, far more patients acquired the disease in our surgical wards, into which no cases of influenza were admitted, than in the general medical wards, in which were placed 36

cases with the disease already upon them. In Elizabeth Ward 9, and in Clayton 7 patients were attacked, while no cases of influenza were admitted; in Christian 14 cases were admitted, there being as many as four in the wards at a time, but no one acquired it save the sister and staff-nurse. Now, on the surgical side more patients are up and able to go from bed to bed than is ever the case on the medical side, so that it is possible that the key to the discrepancy lies in the closeness of contact, and it is probable that influenza ranks considerably below typhus in regard to the effective range through which the poison can be transmitted.

Influenza, I believe, is thus feebly communicable, but no attempt to determine the incubation period is satisfactory. It is certainly short, perhaps a day or two; but the disease is of so wide a distribution that even cases where it is apparently most accurately determined must necessarily be open to error; and the same rush of the epidemic which swamps a whole community with its great tide of universal and simultaneous infection blots out the period of incubation as well as the faint traces of contagiousness.

Second attacks of influenza without doubt occur, but having regard to the vast numbers affected they cannot be considered common; about 10 such cases came to the hospital. Rather more common was the reappearance of the chief features of the disease during convalescence.

Out of 1500 cases not more than 20 were under ten years of age, and none were under five, but in the direction of old age there was no limit apparent.

At the beginning of the epidemic males were far more frequently affected than females, but as time wore on this disproportion between the sexes grew less and less, though the total number shows three males to one female.

The mortality of influenza, as drawn from our hospital figures, lies between .5 and .6 per cent.; the former figure is probably nearer the truth.

Treatment.—There was everywhere observable a disinclination to take precautions during an attack of influenza, which, now that we look back upon the epidemic, must be attributed in part to want of knowledge, and medical men were in their own cases the worst offenders. Every one felt

that the disease was unpleasant, but with a mortality of less than .6 per cent. it had no terrors.

There can be little doubt that two or three days should be spent in bed, even in the slightest attack, that the patient should never leave his bed until the fever and more acute symptoms have disappeared, and that during convalescence he should behave and be treated as one on the verge of bronchitis or pneumonia. No very large experience of the disease is required to convince one of the necessity of such a course.

Various drugs were used, such as quinine, salicin, salicylate of soda, antipyrin, Dover's powder, and various diaphoretics, but I doubt if the course of the disease was thereby ever materially modified.

Symptoms, however, certainly could be controlled, though it was by pure empiricism that drugs were chosen for the purpose. The aching of back and limbs was relieved, sometimes with great rapidity, by salicylate of soda, especially when combined with the bromide of potassium or ammonium, and the pains in the head yielded to antipyrin, so that one fell insensibly into the habit (for want of a more rational method) of resorting to one or other of these drugs according as one symptom or the other predominated.

Neuralgia of later occurrence was strikingly amenable to antipyrin, but in a few cases the changes were rung on antipyrin, butyl-chloral hydrate, gelsemium, caffeine, and quinine, with an extremely small result.

Alcohol as a medicine was very seldom necessary during the acute stage, except when pneumonia was present, but during a slow convalescence it was frequently used with benefit.

ON A CASE
OF
TOTAL TRANSVERSE LESION IN THE UPPER
DORSAL REGION OF THE CORD.

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THE following case of injury to the spinal cord in a man who survived the accident ten months seemed to me worthy of record as illustrating the symptoms and secondary degenerations which follow upon a total transverse lesion of limited longitudinal extent in the upper dorsal region of the cord.

The patient was a healthy man of forty-eight years of age, who on September 21st, 1889, fell to the ground from a height of twenty feet owing to the breaking of the branch of a pear-tree upon which he was standing picking fruit. He appears to have alighted upon his feet and then fallen backwards, and on trying to get up immediately afterwards, found that he was unable to do so from loss of power in his legs. He was brought to the Bristol General Hospital as quickly as possible, and was quite conscious and free from pain. On examination on the next day but one, there was absolute motor paralysis and complete loss of sensation of all kinds below the fifth rib on each side; the breathing was diaphragmatic, the urine and fæces retained; the pupils equal, of normal size, and reacting to light and accommodation; there was slight priapism;

the arms were unaffected. The plantar, cremasteric, and abdominal reflexes, and the knee-jerks were absent. A bruise was noted over the second dorsal vertebra, and over the left shoulder; the spine of the third dorsal vertebra was loose; there was no lateral displacement of any of the vertebræ. The temperature went up to 100° on the second night after the accident, but afterwards remained normal, except on one occasion, when it went up to 104° after a dose of croton oil.

Mr. Dobson, under whose care the patient was placed, cut down upon the seat of the injury to the spine, and found that the spinous processes of the second and third and the laminae of the third dorsal vertebræ were fractured, leaving an opening through which the dura mater was visible on separating the muscular attachments; the loose pieces of bone were removed, and also the lamina of the second dorsal vertebræ, as it was seen to be compressing the cord. There was very little bleeding during the operation and the man made a good recovery from it, but not the least return of motor power or of sensation followed.

He remained in the hospital till March 27th, 1890, and the following are briefly the more important features of his illness. A bed sore formed over the sacrum and healed up, and later smaller ones over the tuberosities of the ilium and over the heels. During the whole time the motor and sensory paralysis remained unchanged; the muscles of the legs and thighs never became rigid, but grew flabby and small from disuse, the lower part of the trunk and legs remaining absolutely motionless throughout the illness. There was obstinate constipation; the urine required to be drawn off by catheter, and was alkaline from one month after the accident in spite of regular washing out of the bladder. Towards the end, from the formation of adhesions, the joints, &c., became stiff as a result of the legs being kept constantly in the same position, but there was no rigidity of muscles at any time, and the superficial and deep reflexes were absent throughout. He was discharged incurable in March, went to the Workhouse Infirmary, and died there on July 22nd from the effects of large sloughing bedsores which formed over the lower dorsal spines and sacrum, over the heels, and smaller ones on the dorsum of the feet.

At the autopsy, made twenty-two hours after death, the body was much emaciated, the upper lobe of the right lung showed partial diffuse consolidation, and the organ was firmly adherent to the chest-wall and diaphragm. The other thoracic and abdominal viscera were normal. The dura mater was adherent to the calvarium, and the frontal lobes were torn in removing the brain. On opening the spinal canal, the body of the third dorsal vertebra was found to be displaced forwards, whilst that of the fourth appeared to have passed somewhat backwards, so that a sharp angle was formed between them. The laminae and spines of the second and third dorsal vertebrae had been removed at the operation, and their place was taken by dense inflammatory tissue, matting together all the structures in the neighbourhood, and separated with some difficulty from the spinal dura mater. The brain and spinal cord were removed *en masse*, and placed in Müller's fluid. Except that the frontal lobes were somewhat soft, the brain was healthy. A series of sections were made through the pons, medulla, and cord, and stained by Prof. Hamilton's modification of Weigert's method.

For a longitudinal extent of one and a half inches at the level of the second and third dorsal vertebrae the cord was completely broken up, being represented by a small cylindrical mass quite disorganised and structureless in appearance, about the size of a goose quill, lying in the midst of inflammatory new formation. The second and third dorsal nerves were atrophied. Careful examination of sections made through the seat of greatest damage showed that no nerve-fibres had escaped, so that there was an absolute interruption in the continuity of the cord at this level. For about half an inch above this, though the natural shape of the cord was more or less preserved, its component parts were destroyed by inflammatory changes, and just above this sections showed that the morbid changes became most conspicuous in the posterior columns and marginal zone, until at about an inch from the upper limit of the lesion they are practically confined to degeneration of the whole of the posterior columns and to the marginal zone of the cord in the lateral column. At the upper part of this level, between the origins of the eighth cervical and first dorsal nerves, the columns of Goll and the

posterior internal columns show complete degeneration, and a few degenerated fibres are seen passing through the postero-external columns on their way to join these. A ring of well-defined sclerosis shows itself on the margin of the cord extending from Lissaner's tract behind almost to the anterior roots in front (fig. 4, *a, b*). Higher up degeneration in the posterior columns is confined to the tracts of Goll, running up to and ending in the medulla in the usual way. The direct lateral cerebellar is clearly separated by a small area of healthy fibres from the antero-lateral ascending tract, and the latter appears as a somewhat wedge-shaped area situated on the margin of the cord in the lateral column—throughout nearly the whole extent of the cervical region (fig. 3, *a, b*). In the uppermost part of the cervical region, however, the two tracts begin to run into each other (fig. 2, *a, b*), and at the level of the decussation appear to be fused together (fig. 1, *a, b*). In the medulla, they occupy an area roughly wedge-shaped lying dorso-lateral to the olive, separated from the lateral margin by some of the external arcuate fibres, and bounded internally by fibres which course towards the restiform body, and which are composed of fibres from the olive, raphé, and external arcuate fibres, a few of which latter pass through the tract. It could be traced in this position as high as the middle of the calamus scriptorius but at this level is less conspicuous, and I could not satisfy myself as to its further course. In the cervical region this antero-lateral ascending tract forms a very distinct area in which sclerosis is complete except for the presence of a very few scattered fine fibres, and is sharply demarcated from the contiguous healthy parts. In fig. 4, where an annular layer of sclerosis extends from the anterior to the posterior roots, degenerated fibres lie scattered along the internal margin of the tract as if on their way to pass into it from segments of the cord immediately below; but in no other part of the cervical cord could it be described as a "diffuse" degeneration, as its limits are clearly defined. This separation of the ascending antero-lateral from the direct lateral cerebellar tract seems to correspond to healthy ascending fibres passing in from the cervical region of the cord, which is unaffected by the lesion; and the constitution of the tract in relation to different levels of the cord would

then be that fibres from the lowest parts lie furthest forward, and that, as fresh fibres pass into it on its way up the cord, these successively lie behind those arising from segments immediately below them and in front of those arising from segments immediately above.

Although the direct lateral cerebellar tract above the lesion is the seat of well-marked sclerosis, there are still a small number of healthy fine fibres scattered through it, varying in number in different segments. Below the lesion the tract consists exclusively of fibres of very large size, and can be traced downwards to about the level of the tenth dorsal nerves; the trabeculæ running into it from the degenerated pyramidal tract appear to be thicker and more numerous than normal. It has been suggested that these fine fibres which thus degenerate downwards are fibres which have strayed from the crossed pyramidal tract. In favour of this is their degeneration with the latter, whilst they become very few in number or even disappear at the decussation where the pyramidal tracts have nearly or quite crossed over. The corresponding region of the medulla, as described above, contains indeed a few fine fibres, but here their exact origin would necessarily be more uncertain. In connection with these peripherally lying tracts, it may be well to mention that there was no thickening of pia mater nor ingrowth of connective tissue from the margin of the cord.

Sections at from half to one inch below the lesion (fig. 5) show that the direct and crossed pyramidal tracts are completely degenerated; in front of the latter and continuous with them an area of degeneration somewhat semilunar in shape passes laterally to the anterior horns, and the degeneration in the anterior columns stretches for some distance outwards along the margin of the cord. These regions stand out distinctly from the slighter morbid changes which affect nearly the whole of the section at this level. At the sixth dorsal these areas of sclerosis contiguous to the pyramidal tracts are smaller, but still very obvious (fig. 6), and can be made out as far down as the level of the tenth to eleventh dorsal, but not below this, they probably correspond to fibres running for some distance which connect adjacent segments above and below. In fig. 8 the lesion is reduced

to sclerosis of the pyramidal tracts. It will be noted that the direct tracts are large in this cord, and extend right down to the lowest dorsal region, that on the left is larger than that on the right side, and they are inversely proportional to the crossed tracts in size. The microscopic changes in the sclerosed areas correspond to the ordinary descriptions. Except where destroyed by the lesion, the grey matter and its contained nerve-cells appeared healthy, the lower dorsal and lumbar regions being carefully examined as to this point.

It is interesting to note the complete absence of muscular rigidity, of the knee-jerk, and of reflexes of all kinds below the lesion, and this in spite of the fact that degeneration of the most complete kind had taken place in the pyramidal tracts. Dr. Charlton Bastian has particularly insisted that this is the ordinary course of events in total transverse lesions of the cord in the lower cervical or upper dorsal regions, and that when such an interval of time has elapsed after the injury as to preclude the influence of shock on the general functions of the cord—which has been adduced as an explanation. But if this is the case, not only will the ordinary rules laid down for the diagnosis of lesions at different levels of the cord require some modification, but the current theories of the origin of muscular rigidities and exaggeration of reflexes will also need revision. It has been suggested that in the cases under discussion there is always a lesion in, or a spread of the mischief from above to the lumbar enlargement. Dr. Bastian, however, brings forward several cases in which the lumbar grey matter was healthy, and the lumbar enlargement in my patient shows no lesion whatever except the sclerosis of the crossed pyramidal tracts. The most generally accepted explanation of the pathogeny of exaggerated deep reflexes and muscular rigidity is that they are due to an increase of the muscle-tone; that in health the spinal reflex centres, on which the muscle-tone is dependent, are constantly held in check by influences passing down from the intracranial centres which restrain their activity; but that when there is any interruption from disease or injury in the course of the fibres that convey these impulses from the brain to the cord, the restraining influence is lost—the spinal centres are, so to speak, “let go,” and as a result of their now unchecked action

the muscle-tone is increased, and this increase shows itself by the appearance of rigidities and exaggerated deep reflexes. The case, then, of a total transverse lesion of the cord would on this hypothesis be most favorable to the development of this condition, and it is widely held that these are the signs present in cases of such a lesion in the lower cervical or upper dorsal region. Sclerosis of the pyramidal tracts is most commonly associated with muscular rigidity and exaggerated deep reflexes, and it has been stated that the latter phenomena are due to the cutting off of cerebral influences by the destruction of these fibres, which form the most direct path between the cerebral motor centres and the motor cells of the spinal grey matter.

Dr. Gowers says that "On the whole it seems to be highly probable that the normal restraint is due in some way to the influence of the terminal portion of the pyramidal fibres within the grey matter, and that the excess of this reflex action follows any impairment of the integrity of these structures." He adds "that a primary overaction of the centres is conceivable, but it is not probable that such overaction is the cause of the permanent excess which results from disease higher up the spinal cord."¹ On the other hand, Charcot's view is that the sclerosis of the pyramidal tracts indirectly causes the contracture by constituting an irritative lesion which reacts on the motor cells of the anterior cornua by means of their anatomical connection through the terminal fibres of these tracts, so that the immediate cause of the contracture is in the grey matter, and not in the lateral column itself. The morbid influence thus communicated to the motor cells is a constantly acting force, and when present in great excess may lead to atrophy of the cells, as in certain cases of extreme hemiplegic contracture; as a rule, however, it stops short of this. On this theory, then, the essential cause of the rigidities, &c., is the nature of the lesion in the pyramidal tracts.

To return for a moment to the first explanation that the cutting off of the impulses descending from the intracranial centres is sufficient to allow rigidity, &c., to be developed, this seems to be negatived by a case of this kind, in which all

¹ 'Dis. of Nervous System,' vol. i, p. 137.

connection was completely interrupted but no contracture followed. Perhaps it may be pointed out that, though experiments show that in the lower animals the spinal reflex actions are increased in number and complexity after severance from the brain, we have little or no satisfactory evidence that such a condition obtains in man. Indeed, it may be argued with some probability that the reflex movements carried out by the cord are in him fewer and more simple, the more complex actions being relegated to the lower cranial centres.

A case of the kind which forms the subject of this paper shows clearly that muscular rigidities and the accompanying increase of tendon-reflexes may not occur when the connection of the brain with the cord is entirely cut off and when there is further complete sclerosis of the pyramidal tracts. The theories which, to explain the occurrence of these phenomena, rely solely on changes, irritative or otherwise, occurring as a part of the morbid process in the degeneration of the pyramidal tracts or of their terminal ramifications will not hold ground unless they are found to be true in all cases in which degeneration of these tracts is well marked. We are therefore driven to conclude that such an explanation does not cover the whole of the facts, and that besides the sclerosis of the pyramidal tracts there must be some further factor in the production of the phenomena in question. This further factor appears to be the preservation of some connection between the brain and cord, for in cases in which muscular rigidities, &c., are most conspicuous, *e.g.* hemiplegia, spastic and ataxic paraplegia, the pyramidal tracts are found to be degenerated, but communication between the brain and cord is in some way retained either by the grey matter or by the remaining healthy parts of the lateral columns. This continuity is lost in the case of total transverse lesion in which descending sclerosis is also present.

When the direct ordinary paths of special nervous impulses in the central nervous system are destroyed, these seem to be able in many cases to find out for themselves fresh and more circuitous routes by which they reach their former destination. Possibly the impulses which should descend the pyramidal tracts may after their destruction run along other fibres in the lateral columns which connect adjacent segments of the

cord above and below and so reach eventually the motor cornua. Keeping, then, to the view that the activities of the spinal centres are normally restrained by impulses reaching them from the intracranial centres by the direct course along the pyramidal tracts, when the fibres of the latter are degenerated, it is possible that the intracranial impulses might still reach the spinal centres, but by a more roundabout course, and thus be delayed in their transmission. Now, impulses reaching a centre already in action may either exalt or inhibit that action, and, bearing in mind Dr. Lauder Brunton's analogy of the phenomena of inhibition with those of interference in waves of light and sound as showing the importance, with relation to the effect produced, of the moment of time at which an impulse arrives at a nervous centre in action, it is conceivable that the impulses which, travelling along the direct course of the pyramidal tracts, normally check the action of the spinal centres might by the delay in transmission reach these centres at such a time as to augment instead of to inhibit their activity, and in this way give rise to the increase of the muscular tone which shows itself in rigidities and exaggerated tendon-reflexes. In this way might also be explained the delay in the occurrence of rigidity after any lesion which leads to sclerosis of the pyramidal tracts, some time being required for the opening up of the new and more circuitous routes and the ready transmission of impulses along them.

I cannot do more within the limits of this paper than just allude to the well-known view of Dr. Hughlings Jackson that in descending sclerosis the unantagonised influence of the cerebellum is allowed full play by the cutting off the cerebral influence; and indeed the present state of our knowledge as to the influence of the different intracranial centres on the spinal cord is too indefinite to allow us to conclude more than that in cases of lesion in the upper part of the spinal cord there must be retained some connection of its lower parts with the intracranial centres, even when sclerosis of the pyramidal tracts is present, in order that muscular rigidity and increased tendon-reflexes may occur.

DESCRIPTION OF PLATE I.

Illustrating Dr. Michell Clarke's Case of Total Transverse Lesion in the Upper Dorsal Region of the Cord.

FIG. 1.—At decussation (upper limit of).

FIG. 2.—At 1st cervical nerve.

FIG. 3.—At 5th cervical.

FIG. 4.—Between 8th cervical and 1st dorsal.

FIG. 5.—At 4th dorsal.

FIG. 6.—At 6th dorsal.

FIG. 7.—At 10th—11th dorsal.

FIG. 8.—From lumbar enlargement.

Figs. 5, 6, 7, 8, are drawn on a slightly larger scale than the rest.

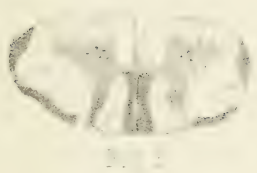
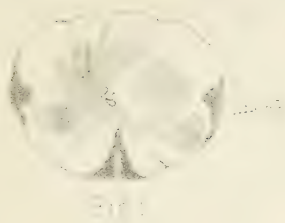
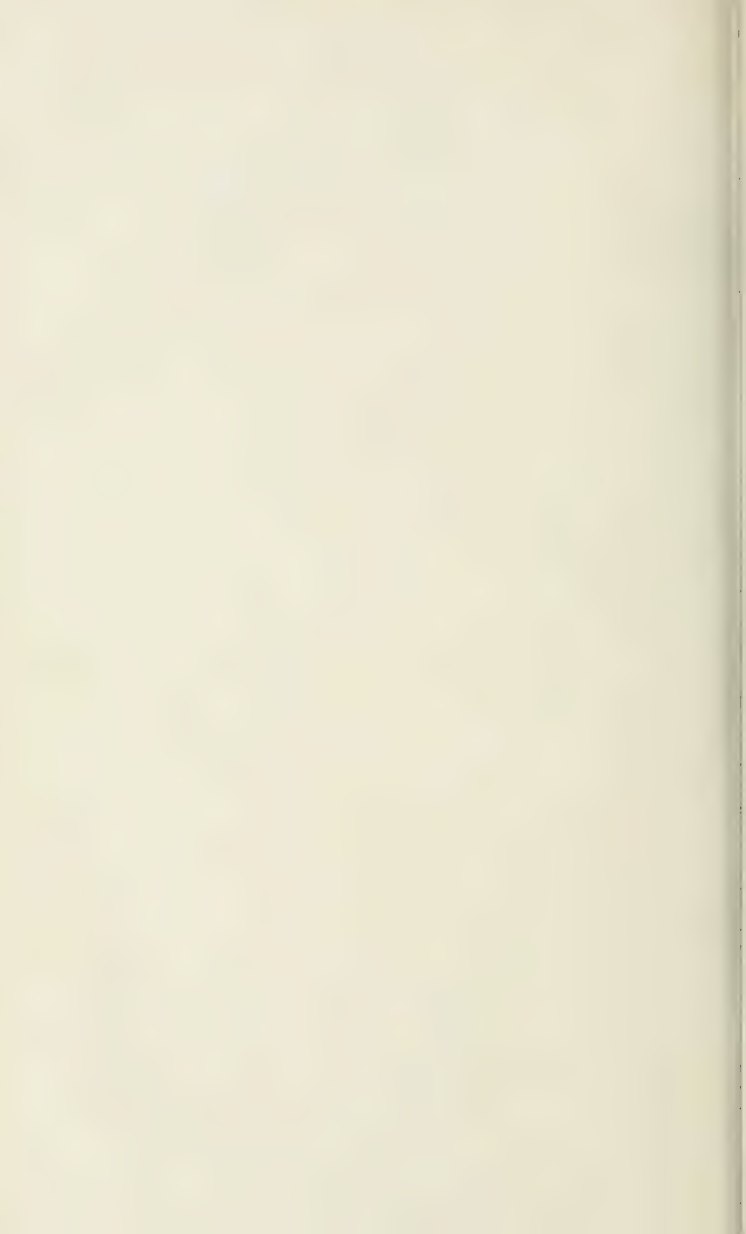


Fig 7





SIXTY-FOUR CASES
OF
NON-STRANGULATED HERNIA TREATED
BY RADICAL CURE.

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IN the following pages there is presented a tabulated report with an analysis of all the cases of radical cure for hernia performed by the surgeons in St. Thomas's Hospital from the beginning of 1879 up to the end of March, 1890. The compilation starts from the period when aseptic surgery was established on a sound basis, so we may consider that the chances of success after operation during this time have been fairly equal. The list does not include any cases in which the operation was done as a matter of expediency after the relief of a strangulation. Several methods of operation were adopted. The cases treated were of varying severity; and we venture to think that the results obtained may be compared favorably with the statistics of any special operator.

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of
								Contents of sac and treatment.
1	Nov. 23, 1881	W. M.	M	10	School	Congenital right inguinal	Since birth	No contents
2	Aug. 30, 1882	R. H.	M	1 $\frac{5}{12}$	—	Left funicular	No history; no truss worn	Gut only; reducible
3	Dec. 1, 1883	T. B.	M	48	Farm labourer	Double inguinal	On right side for 2 years, and on left for 9 years; both reducible. For last 9 months not been able to keep hernia up with truss. 6 months ago had left side strangulated, but reduced with hot fomentations and taxis	Contents reduced before operation
4	Nov. 22, 1884	T. C.	M	9	School	Right infantile	Since birth	On cutting down an empty sac found extending from the external ring to the testis; a probe could not be passed into the peritoneal cavity. The sac was ligatured at neck and divided. Another sac was found on the outer side which, on being opened, contained omentum; this was ligatured and cut away. The sac was separated, tied, and cut away
5	June 30, 1885	J. J.	F	42	Teacher	Left femoral	Came suddenly 11 years before, after a strain. Attacks of trouble with hernia from time to time	Irreducible; omentum adherent to the sac; this was tied and cut off
6	July 2, 1885	F. W.	M	2 $\frac{1}{2}$	—	Right funicular	Since birth	Gut; no adhesions
7	Nov. 28, 1885	L. C.	M	29	Brass finisher	Right inguinal	Had had double hernia for 9 years, and had worn truss	Omentum in sac, non-adherent; ligatured and cut away
8	Dec. 21, 1885	R. M.	M	7	School	Congenital right inguinal	4 months	No contents
9	Jan. 12, 1886	C. B.	M	22	Butcher	Left inguinal	Had not noticed it until refused for army the day before admission	Omentum; reduced before operation
10	Feb. 6, 1886	R. H.	M	26	Car-penter	Right funicular	First noticed at 8 years of age after a fall. Had tried trusses, but they failed to keep it up	Omentum, not adherent; ligatured and cut off

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac ligatured at external ring, and divided four times below; not removed; sac separated and cut off	Nil	—	Truss	No return 4 years after; no history since	C.	—
Sac separated, ligatured, and cut off	3 catgut sutures to the pillars	—	No truss	In March, 1884, no protrusion, and no impulse to be felt	C.	—
Sac separated, ligatured, and cut off	2 catgut sutures to pillars on each side	Carboluria	Truss	No return for some considerable period after operation; not seen or heard of recently	C.	Subject of epilepsy.
—	Ring not sutured	—	—	Not to be traced	C.?	—
Sac separated and removed	Parts about ring deeply sutured with catgut	—	Truss	Rupture reappeared 6 weeks after operation; always worn truss since	R.	—
Sac separated and cut off	External ring sutured with 2 catgut stitches	Inflammatory swelling of scrotum; vomiting and diarrhoea; death on 10th day	—	—	Died	No post-mortem.
Sac separated and removed	Nil	Hæmorrhage from the wound on the night of operation; on 2nd day developed some local peritonitis; on 9th day testis found to be sloughing; on 14th day recurrence of hæmorrhage	—	Not to be traced	C.?	1 brother ruptured. 7 years
Sac separated above, tied, and divided	Catgut sutures	—	No truss	No sign of recurrence when seen some time afterwards	C.	—
Sac separated; ligatured at internal ring and removed	4 catgut sutures to the pillars	—	No truss	Inquiry not responded to	C.?	—
Sac removed	2 catgut sutures to pillars	—	No truss	No sign of any return in October, 1890	C.	—

No.	Date of operation.	Initials.	Sex	Age.	Occupation	Form of hernia.	Duration of hernia.	Nature
								Contents of sac and treatment
11	April 3, 1886	T. J.	M	18	—	Right funicular	Came after a strain 3 years before. Wore a truss for 2 or 3 days before admission, but left it off because of pain	Omentum adherent, but gut reducible; omentum tied and cut away
12	May 1, 1886	A. M.	M	43	Watch-maker	Congenital right inguinal	3 years; no truss worn. 2 years before admission it had been strangulated. Always discomfort in hernia if solid food taken	Omentum adherent, ligatured and cut off; atrophied testis in sac, removed
13	Sept. 15, 1886	S. W.	M	13	School	Congenital right inguinal	First noticed 6 months before, but truss could not be applied owing to the position of the testis	On opening the sac it was found to pass by the side of the scrotum into the adductor region. There was a small cyst attached to the epididymis, but the testis was normal. The testis was raised and replaced in the peritoneal pouch in the scrotum, being sutured to the bottom. The latter pouch came off as a diverticulum from the sac containing the testis at the external ring
14	Sept. 18, 1886	M. H.	F	39	Married	Umbilical	6 months; ulcerated on the surface	Adherent omentum; ligatured in four pieces and cut away
15	Oct. 15, 1886	W. F.	M	3½	—	Congenital right inguinal	Noticed at 6 months. Not kept up by truss	No contents but testis
16	Nov. 18, 1886	F. G.	M	3½	—	Congenital right inguinal	Noticed at 6 months. Tapped for a hydrocele (not at St. Thomas's), and for about 6 months after all the feces passed through the puncture. This opening was closed by a plastic operation. Truss had been tried before admission, but not successful in keeping up the hernia	Irreducible. Sac contained the cæcum, which was adherent to the sac; this was separated and returned
17	Nov. 23, 1886	T. M.	M	19	Carpenter	Left inguinal (bubonocoele)	Appeared 6 months before. Refused for army	Omentum ligatured and cut off

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac tied high up, but not removed	No sutures	—	Truss	Not heard of since	C.?	—
Sac removed	4 catgut sutures to pillars	—	Truss	Seen frequently for some time afterwards and no return	C.	—
After making a tunica vaginalis all the remainder of the peritoneal process was removed	Catgut sutures used	—	No truss	No sign of recurrence 2 years after	C.	—
Sac stitched up separately from abdominal wall, but not removed	No sutures	Wound suppurated and an abscess formed in abdominal wall; this probably burst into peritoneal cavity. She was sick for two or three days after operation. On 32nd day she began to vomit, and complained of abdominal pain. Died on 33rd day	—	—	Died	No post-mortem notes.
Sac divided at external ring; lower part sutured up to form tunica vaginalis	Catgut sutures used	—	No truss	Complete cure (Oct., 1890)	C.	—
Sac divided at internal ring	Catgut sutures used	—	No truss	Seen 1 year after, and no sign of recurrence	C.	—
Sac removed	One catgut suture used	—	No truss	Not to be traced	C.?	—

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of
								Contents of sac and treatment
18	Feb. 2, 1887	H. J.	M	48	Labourer in gas works	Left inguinal	3 years. Worn truss, but for some time it had not kept hernia up. For 1 month the rupture had been irreducible	One sac in front containing adherent omentum which surrounded gut a second sac behind with omentum only
19	Feb. 2, 1887	J. D.	M	31	House agent	Right scrotal	Had a right inguinal rupture, as a child, and had worn a truss up to 6 or 7 years ago. On several occasions he has had great difficulty in reducing the hernia. Had had another attack of trouble with the hernia a few days before admission	Fluid and omentum in sac; the omentum was ligatured and removed
20	Feb. 23, 1887	E. P.	M	23	Grocer	Congenital right inguinal	Noticed for 12 months. Especially large last 6 months. No truss worn	Omentum; returned after operation
21	Mar. 25, 1887	J. F.	M	34	Carman	Left inguinal	10 years before, after some exertion noticed swelling in left groin, which did not completely disappear on lying down. For 3 weeks before admission had had great discomfort about the hernia	Fluid and omentum; omentum separated, ligatured, and cut away
22	June 18, 1887	W. W.	M	38	Collier	Right scrotal	3 years; been wearing truss, but not effectual	Omentum; reduced before operation
23	July 7, 1887	C. M.	M	40	Omnibus conductor	Right inguinal	5 years. Worn truss till 6 months ago, when he left it off. On June 20 hernia strangulated; reduced by taxis. Passed four or five blood-stained motions after reduction	—
24	July 9, 1887	W. B.	M	51	Theatrical property maker	Left scrotal	Irreducible hernia for 10 years. Trouble with hernia on and off. Rupture very large	Gut adherent to sac; separated
25	July 29, 1887	W. G.	M	19	Carpenter	Right inguinal	9 months. Increasing in size lately, and become irreducible	Adherent omentum, which was removed

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Both sacs separated and removed; the constituents of the cord surrounded the posterior sac	—	—	Truss	Not to be traced	C. ?	This case seemed to be a combination of an ordinary acquired hernia with an infantile hernia.
Sac removed	None	Troubled with cough after	—	Not to be traced	C. ?	From the history it appears to have been a funicular hernia.
Sac communicated with tunica vaginalis, divided and upper part cut away	Pillars sutured with catgut	—	No truss	Remained quite well up to a few months ago; not heard of since (Oct., 1890)	C.	—
Sac removed	None	Suppuration in wound; temp. went up to 104.4° F.	Truss	Left off truss for last 12 months, and no sign of return	C.	—
Sac removed	Pillars sutured	—	No truss	Not to be traced	C. ?	—
Sac removed	2 sutures between Poupart's ligament and conjoined tendon	Had erysipelas July 8. On July 11 right testis became much swollen	—	Not to be traced	C. ?	—
Sac removed	Pillars sutured with silk	Delirium for 5 days before death. Local peritonitis. Died on 11th day	—	—	Died	P.M.—Cardiac disease with atheroma of vessels; local peritonitis; hydrocele on right side.
Sac removed	None	Inflammation in scrotum with suppuration, starting on 5th day	Truss	Hernia recurred very soon after operation	R.	—

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of
								Contents of sac and treatment
26	Sept. 3, 1887	G. W.	M	55	Labourer	Left inguinal	16 years. Kept up by truss till 2 months ago; since then failure of truss	No contents but fluid
27	Oct. 12, 1887	A. S.	M	29	Plate-layer	Right inguinal	7 years before first noticed, when he had an attack of strangulation. Wore truss after, but during the last year it has not kept the hernia up, the latter being now irreducible	Omentum adherent to sac; ligatured and removed
28	Jan. 4, 1888	H. M.	M	21	Tele-graph lineman	Left inguinal	12 months. Last six months worn truss, but hernia not kept up	None
29	Jan. 28, 1888	J. W.	M	17	Labourer	Right inguinal	Only just noticed. Refused for army	—
30	Feb. 18, 1888	A. P.	M	54	Trunk maker	Right inguinal	Operated on for right strangulated hernia in 1863. No trouble after till 4 years ago. 2 months since found truss did not keep hernia up	Omentum ligatured and removed
31	Mar. 10, 1888	E. C.	M	59	Pensioner	Right inguinal	20 years. Worn truss all the time, but latterly it has not acted. An attack of strangulation 14 days before admission	Gut probably in sac
32	Mar. 17, 1888	W. B.	M	20	Postman	Congenital left inguinal	Appeared at 12 years of age. He wore truss for 4 months, and then the hernia seeming cured he left it off. 4 months ago it reappeared, and the truss was again worn, but it failed to keep the hernia up	Contents reducible

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks
Treatment of sac.	Treatment of ring.					
Very thick sac. Cord in front. sac ligatured with kangaroo tendon and removed	Pillars sutured with wire	—	No truss	Not to be traced	C. ?	Hydrocele of tunica vaginalis on left side, which was opened at operation.
Sac removed	Pillars sutured	Hæmorrhage into soft parts on next day; suppuration afterwards	No truss	No recurrence (Oct., 1890)	C.	—
Sac removed	Pillars sutured	—	No truss	Not to be traced	C. ?	—
No sac seen at operation	Pillars sutured with catgut	—	Truss	Seen Aug. 11th, 1890. Slight fulness and protrusion on coughing; wore truss till 4 months ago; ordered a new truss	R.	—
Neck of sac divided, but not removed	Pillars sutured with 4 silk stitches	—	Truss	Hernia reappeared about 3 months after	R.	—
Sac not opened. Ligatured at neck and divided; lower part not removed	Pillars sutured with 4 catgut sutures, the stump of the sac being transfixed	—	Truss	Wore truss till his death, June 6, 1889, from inflammation of the bowels. No return up to that time	C.	—
Sac divided; the lower part formed tunica vaginalis; the upper end made to plug ring and fixed there	Conjoined tendon and Poupart's ligament sutured with kangaroo tendon	—	No truss	Seen March, 1890, and there was no sign of any impulse or protrusion	C.	—

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature
								Contents of sac and treatment
33	April 7, 1888	F. D.	M	51	Printer	Right scrotal	Swelling on right side for 12 years. No truss worn. Strangulated for some hours a few days before admission. Irreducible then, but no signs of strangulation	Fluid and indurated omentum. The latter being adherent to sac was separated, ligatured, and cut off
34	May 13, 1888	G. M.	M	13	School	Congenital right inguinal	Since birth. Wore a truss for three years from 4 to 7 years of age, but it did not cure	Only testis in the sac which was limited to the inguinal canal. The other was removed. It was rotated in the sac
35	June 23, 1888	G. B.	M	16	Railway porter	Left funicular	Since birth; lately larger. Reducible	Gut and omentum in sac. The omentum was ligatured and removed
36	Aug. 8, 1888	M. G.	M	28	Collier	Left inguinal	3 years. Worn truss, but not effectual	Omentum ligatured and removed
37	Sept. 1, 1888	J. C.	M	12	School	Congenital right inguinal	Since birth	Right testis at external ring. As this could not be brought to the bottom of the scrotum, vas deferens separated from the epididymis and testis inverted. The glob major was then stitched to the scrotum. Length increased by $\frac{3}{4}$ inch
38	Sept. 8, 1888	W. C.	M	4 $\frac{1}{2}$	—	Left funicular	Truss does not act. Since birth	Omentum adherent to mouth of sac; ligatured and cut off
39	Dec. 8, 1888	W. A.	M	20	Baker	Right inguinal	Hernia 6 years; attributed to injury. Truss of no use	—
40	Mar. 16, 1889	H. S.	M	26	Carman	Right inguinal	10 years. Never worn truss. Irreducible	Adherent matted intestine

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac removed	None	—	No truss	Not to be traced	C. ?	—
Sac removed	Conjoined tendon and Poupart's ligament sutured	Wound suppurated a little	No truss	In May, 1889, no sign of any return	C.	—
Sac removed	Pillars sutured with catgut	—	Truss	Wore the truss for 9 months afterwards, then he left it off. No sign of any return	C.	—
Sac removed	Pillars sutured with kangaroo tendon	—	Truss	Has worn a truss when at work ever since. There is no sign of any return	C.	—
Upper part of sac separated from testis and twisted up and made to plug the ring	Pillars sutured with kangaroo tendon	—	No truss	Seen frequently since, and no sign of any return	C.	—
Sac separated. A continuous suture passed through sac, so that when it was drawn on the sac was folded up like a Venetian blind (MacEwen's)	The ends of continuous suture passed through pillars of ring and sac fixed there. A few more catgut sutures used	Slight suppuration	No truss	Seen frequently since, and no sign of any return	C.	—
Sac not found at operation	Pillars sutured with 5 kangaroo tendons	—	—	Seen July 6, 1889, when hernia had recurred	R.	Subject of epilepsy
Sac removed	Pillars sutured	—	—	Hernia reappeared 5 months after	R.	—

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of	
								Contents of sac and treatment	
41	Mar. 23, 1889	F. H.	M	19	—	Congenital right inguinal	Since birth. Wore a truss from 6 weeks old. When 8 years old left side operated on, and wore a truss after for 6 months. A double truss was then worn for 5 years, but since 14 he has not worn one at all because of the inconvenience produced by it. Right testis undescended; left all right	Gut (non-adherent) in sac	
42	Mar. 30, 1889	W. D.	M	$\frac{10}{12}$	—	Right funicular	At birth; also a small umbilical hernia	No contents	
43	April 10, 1889	P. C.	M	14	School	Right funicular	3 years. Noticed after an injury. Irreducible	Adherent omentum ligatured and cut off	
44	April 26, 1889	F. D.	M	20	Engineer	Left funicular	Only noticed just before	None	
45	May 10, 1889	T. S.	M	13	School	Congenital right inguinal	First noticed at 8 years old, the size of a walnut, after jumping; reducible. Right testis undescended; left at external ring	—	
46	June 22, 1889	T. C.	M	11	School	Right funicular	3 years before fell down; noticed rupture 14 days after; reducible. No truss worn	Gut in sac, but only in erect posture. Hernia sac internal to cord	
47	Aug. 3, 1889	E. T.	F	19	Married	Right femoral	1 month. Some pain. No truss worn	Omentum (reducible)	
48	Aug. 5, 1889	G. F.	M	39	Railway guard	Umbilical	2 months. Got gradually larger. No truss	Adherent omentum removed	
49	Aug. 14, 1889	P. P.	M	35	Barman	Right inguinal	12 years. Worn truss	Adherent omentum removed	
50	Aug. 31, 1889	J. C.	M	20	Printer	Congenital left inguinal	Rupture at birth. Not again noticed till 6 weeks ago; since then pain. Truss ordered, but not able to be worn	Adherent omentum removed	

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac removed	Pillars sutured with kangaroo tendon	—	Truss	Wore truss for 6 months after going out. Is not wearing it now. No sign of any return. Seen Aug. 6th, 1890	C.	—
Sac separated, puckered up, and made to plug ring	Kangaroo tendon used for pillars	—	No truss	Went to America 3 months after operation; was all right	C. ?	Phimosis, treated by circumcision, before the radical cure was done.
Sac removed	Pillars sutured with catgut	—	No truss	No sign of any return in Aug., 1890	C.	—
Sac removed. Well-marked annular constriction of sac at internal ring	Pillars sutured with kangaroo tendon	—	Truss	No sign of any return. Is still wearing light truss because his work is heavy	C.	Had strangulated right funicular hernia 6 weeks before. Constriction relieved and radical cure done.
Sac not found	Catgut sutures to pillars	—	No truss	Not to be traced	C. ?	—
Sac removed	Catgut sutures to pillars	Wound suppurated	No truss	No sign of return Aug., 1890	C.	—
Sac removed	None	—	No truss	Kept well some time after operation	C.	—
Sac opened and removed	Ring stitched with 3 sutures	—	Truss	Left off truss 8 months after. Seen Oct., 1890; no recurrence. Left inguinal hernia since developed	C.	—
Sac removed	None	Suppuration in sac; orchitis	Truss	Seen Oct., 1890, and no return	C.	—
Lower part to sac made into tunica vaginalis; upper part made to plug ring	Pillars sutured	—	No truss	Not heard of since	C. ?	—

46 *Non-strangulated Hernia treated by Radical Cure.*

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of
								Contents of sac and treatment
51	Sept. 15, 1889	M. W.	F	49	Married	Left femoral	9 years ago, after a strain. Could not wear a truss owing to the pain produced	Omentum adherent; tied and removed
52	Sept. 18, 1889	J. H.	M	18	Labourer	Congenital right inguinal	10 years. Descended at once to bottom of scrotum. Never worn truss. Easily reducible	Omentum ligatured and removed
53	Sept. 21, 1889	J. S.	M	17	Waiter	Congenital left inguinal	Left testis in groin. 1 year before the hernia appeared. Truss did not keep it up. Wishes to enter army	—
54	Oct. 26, 1889	T. G.	M	30	Carman	Right scrotal	9 years. Truss for 6 years, and hernia reducible. For 14 days before operation hernia irreducible, but not strangulated	Omentum adherent at neck. Removed
55	Oct. 29, 1889	T. B.	M	1 $\frac{4}{12}$	—	Congenital left inguinal	Noticed at 1 month. Worse last 4 months, since child walked	Gut
56	Nov. 2, 1889	G. S.	M	1	—	Congenital right inguinal	Noticed at 2 months. For last 3 months worn truss, but it does not keep hernia up	—
57	Nov. 16, 1889	L. R.	M	26	Butler	Congenital left inguinal	Since birth. Worn truss since childhood. At 21 left off truss, and wore none for 4 years; there was no sign of rupture. 1 year ago hernia reappeared. Had had gonorrhœa some time before admission, with epididymitis in retained testis. Since then truss not able to be worn	Testis removed
58	Dec. 2, 1889	S. C.	M	49	Labourer	Right inguinal	3 years, after a strain. Wore truss. Truss not effectual	No contents
59	Dec. 20, 1889	S. L.	F	41	Married	Right femoral	1 year. Great inconvenience from the hernia. No truss worn	Adherent omentum ligatured and cut off
60	Jan. 3, 1890	C. B.	F	63	Married	Umbilical	6 years. Wore belt for the last 3 years, but occasional trouble with the hernia	Omentum adherent; removed

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac removed	None	—	No truss	Seen often since, and no return	C.	—
Attempted shutting off of tunica vaginalis; this was closed and its upper part returned into canal	Pillars sutured with kangaroo tendon	—	Truss	No sign of recurrence in Oct., 1890. Still wearing truss	C.	Varicocele on left side.
It tied at external ring	No suture	Suppuration in wound on 3rd day	—	No response to inquiry	C.?	Varicocele on left side. Veins ligatured at same time.
Sac removed	Kangaroo tendons to pillars	—	Truss	Wore truss for 5 months. In Aug., 1890, no sign of any return	C.	—
Sac divided. Lower part formed tunica vaginalis, and upper part put into canal	Pillars sutured	Orchitis	Truss	In Aug., 1890, not wearing a truss, and cure is complete	C.	Phimosis. Circumcision before operation.
Lower part of sac to form tunica vaginalis; upper part tied	Pillars sutured with kangaroo tendons	—	No truss	Complete cure	C.	—
Sac removed	Pillars sutured	Wound suppurated. Parotitis on 3rd day	—	—	C.?	—
Sac removed	Pillars sutured with kangaroo tendon	—	Truss	Cure complete, and can work, Aug., 1890	C.	—
Sac removed	—	—	No truss	Hernia returned a few weeks after, and she has since worn a truss	R.	—
Sac divided into two compartments, each containing omentum; sac removed	Kangaroo sutures to ring	—	—	—	C.	—

48 *Non-strangulated Hernia treated by Radical Cure.*

No.	Date of operation.	Initials.	Sex.	Age.	Occupation.	Form of hernia.	Duration of hernia.	Nature of
								Contents of sac and treatment
61	Jan. 10, 1890	M. D.	F	34	Married	Left femoral	2 years. Great inconvenience last 6 months	Omentum removed
62	Jan. 10, 1890	C. M.	M	49	Plasterer	Right scrotal	14 years. No truss. Been getting gradually larger and irreducible	Adherent omentum and transverse colon in sac. Both separated; omentum removed
63	Jan. 11, 1890	W. G.	M	25	—	Left inguinal	12 months. No truss. Seeking Government appointment	None
64	Mar. 30, 1890	A. P.	M	25	School-master	Left funicular	7 years. 2 years ago began to wear a truss, but he left it off as it hurt him. Hernia only appeared occasionally	—

Operation.		Complications.	Truss or not after operation.	After history.	Result.	Remarks.
Treatment of sac.	Treatment of ring.					
Sac removed	—	—	No truss	No recurrence (Oct., 1890)	C.	—
Sac separated and tied up after the manner advocated by Stanmore Bishop	Ring sutured with catgut	On 3rd day became delirious. Wound suppurating on 4th day. Considerable venous oozing into tissues of scrotum. Death on 8th day	—	—	Died	Patient addicted to alcohol. P.M.—Extravasated blood in connective tissue of scrotum, with cellulitis; local peritonitis; atheroma of aorta.
Sac removed	Sutured with catgut	—	Truss	Has worn truss continuously since operation, but there is no protrusion (Aug., 1890)	C.	—
Marked constriction in sac just below internal ring. was evident that no gut had ever descended through it. Sac removed	Ring sutured	—	No truss	In Oct., 1890, no sign of any return	C.	—

Analysis of the above Cases.

Sex.—Of the 64 cases operated on, 57 were males and 7 females. In all statistical tables this preponderance of males is to be seen, and the reason is that a very large proportion of the cases occur in connection with defective closure of the processus vaginalis; and that hernia in the male interferes much more with the occupations of daily life, so that some permanent relief is sought for.

Age.

	Under 5	5—10	10—15	15—20	20—30	30—40	40—50	50—60	60—70	Total.
Males	8	3	6	12	12	6	5	5	1	57
Females	0	0	0	1	0	2	3	0	0	7

(æ. 19)

Among the males under ten the proportion of cases operated on has been very small considering the large number of herniæ in early life due to the defective closure of the processus vaginalis. This is owing to the marked tendency that there is in childhood to cure with or even without truss treatment, by gradual obliteration of the vaginal process at the internal ring. Those cases only come to operation in which the hernia is large, and trusses are ineffectual. Such a tendency to cure is fortunate, for the chances of a successful operation in the young child are considerably lessened by the liability of the wound to become septic from fouling of the dressings by urine and fæces.

It will be noticed that in this list there are no females under adult age. In the female, although herniæ are often met with in early life in connection with the canal of Nuck, they are usually cured by the application of a truss: if such a hernia does remain till adult life, it is easily kept up by a well-fitting truss; or if not, it does not sufficiently interfere with a woman's occupation to lead her to seek radical cure or other treatment unless some accident should happen to the rupture.

Form.—1. MALES.—Of the 57 cases, 56 were inguinal and 1 umbilical.

Of the inguinal herniæ, (a) 24 were acquired, (b) 32 were due to defective closure of the processus vaginalis.

(a) Of the acquired herniæ, 15 were on the right side, 8 on the left, and 1 double.

(b) Of those due to defective closure of processus vaginalis, 18 were congenital herniæ; 13 on right, and 5 on left.

12	„	funicular	„	7	„	5	„
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2	„	infantile	„	2	„	0	„
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This large proportion of right-sided cases among the congenital forms of herniæ (22 out of 32 cases) has been generally observed. Lockwood, in his Hunterian Lectures at the Royal College of Surgeons, showed that this was the case, and that it occurred in connection with the larger excursion of the small intestine on that side. Of the herniæ due to congenital defect, twelve were funicular. These cases are often hard to differentiate from the ordinary acquired inguinal herniæ. In making a diagnosis in adults the history of the hernia in early life should be most carefully inquired into; and even if it has made its appearance after puberty, an observation of the mode of onset may be helpful. There is no doubt that in statistical tables many funicular herniæ have found their resting-place among the acquired cases. Any case of acquired hernia tabulated under puberty should be always regarded as probably of funicular nature. Previous history, then, in statistics, is of the greatest importance in determining between these two forms.

2. FEMALES.—Of the 7 cases, 5 were femoral, 2 on right side and 3 on the left: 2 were umbilical.

Duration of the hernia.—Among the acquired cases of inguinal herniæ there were only four under twenty-one—one at seventeen, two at nineteen, and one at twenty. In these the duration was very short, and the onset seemed to have a distinct relation with the commencement of laborious occupations. In two of these cases the operation was done, not because of any inconvenience caused by the rupture, but owing to the patient having been refused entry into the public service.

Although a hernia is described as congenital in its origin it is not necessarily so in actual duration. In our list the number of ruptures that had been present from birth was 13 out of 32 cases, or slightly over 40 per cent. The first

descent of the hernia into the congenitally patent sac may be considerably delayed, seven of the cases appearing between ten and twenty, one at twenty-two, one at forty, and one even as late as forty-five.

Methods of Operation adopted.

With acquired inguinal herniæ the favoured operation has been that advocated by Mr. Mitchell Banks, viz. tying the sac as high up as possible, removing it, and then suturing the pillars of the ring. Of the 24 cases—

(1) Removing the sac and suturing the ring was done in 14 cases; and of these the pillars were sutured with catgut in four, wire in one, and with kangaroo tendon in three cases. In five the material used is not stated.

In two cases the sac could not be found at the operation, but the pillars were sutured, in one case with catgut and in the other with five kangaroo tendons. In the latter case recurrence of the rupture took place within a few months.

(2) In five cases the sac was removed, but the pillars were not sutured.

(3) In two cases the sac was ligatured at its neck and divided, but not removed, and the pillars were sutured. In both the herniæ were very large, and as the amount of tearing through of tissues required for the separation of the sac would have been great, it was not deemed advisable to attempt this. Silk was used to suture the pillars in one case, catgut in the other.

(4) Stanmore Bishop's operation was performed in one case with a fatal result, the tearing through of the soft parts in the separation of the sac being followed by extravasation of blood with a subsequent cellulitis.

In the treatment of the herniæ due to congenital defect the same principles have been applied as in those cases of acquired hernia. In the true congenital herniæ the lower part of the sac has been left to form a tunica vaginalis after division at its neck, the pillars of the ring being subsequently sutured. In one case of funicular hernia, Ball's modification of twisting up the sac after separation and making it plug the ring was practised. MacEwen's operation was adopted in two cases.

In femoral herniæ the sac in all cases was dissected out and cut away, but in one case only were the soft parts about the ring sutured.

In the cases of umbilical herniæ the sac was separated and removed, and the ring sutured up.

Results of the operation.—From an inquiry made to find out the results of the operation in 60 cases, the present condition was ascertained in 43 cases.

Of the 22 cases of acquired inguinal hernia, 14 replied. Of these nine were completely cured, but in five cases there was recurrence.

Among the cases due to defective closure of the processus vaginalis—

(a) Of the 18 cases of congenital hernia, 14 replied and “all of these were cured.”

(b) Of the 11 cases of funicular hernia, 8 replied and “all of these were cured.”

(c) Of the 2 cases of infantile hernia neither replied.

Of the five cases of femoral hernia, all answered the inquiry. In three there was cure, and in two recurrence.

These statistics prove undoubtedly that there is a much greater chance of radically curing the cases of congenital herniæ than those that are acquired. Why is this? In the congenital hernia the main cause in the formation of the rupture is the patent sac. In the majority of cases if this be removed, and the peritoneal aspect of the ring, instead of being a depression, is converted into a flattened surface, then there is very little tendency to recurrence. In some few cases this may occur, the recurrence being due either to failure of obliteration of the peritoneal depression, or we may have other causes at work beyond the sac, such as a congenital elongation of mesentery, &c. In the acquired hernia the sac is not the primary factor in its development. We may take away the sac in which the hernia is, and strengthen the abdominal wall, and cure may be complete; but in some, intra-abdominal causes which were at work in the first instance of its development, as low attachment of mesentery from prolapse of intestines, remain unaffected. In a great many of these recurrence must take place, and it is especially likely to do so if a truss is not ordered after the operation. If recurrence

does not occur, then we consider that the abdominal wall has been so braced up by the operation as to be an effectual barrier against the descent of another sac.

The part played by the structures outside the sac in preventing recurrence is well shown in the cases of femoral herniæ. Here, although the sac is removed, the tissues about the ring cannot be effectually closed, and so there is very little obstacle to a fresh hernial descent, and in fact we find this commonly takes place unless we make up for the deficiency by the application of a very well-fitting truss.

In the five cases of recurrence of acquired hernia it will be noticed that in two the sac was not found at the operation, but the abdominal walls were sutured up. In one of these very soon after the patient got about, his hernia reappeared. In one case the sac only was removed, and as the condition of the abdominal wall was not strengthened by the operation, recurrence very rapidly took place. In the other two cases the orthodox operation was done: in both the hernia had been a very large one, and recurrence was noticed within six months.

Mortality.—Of the 64 cases, 4 have been fatal, or 6·25 per cent.

(1) (No. 6.) Right funicular hernia in a child aged two and a half. Death took place on the tenth day from diarrhœa and vomiting in connection with a septic inflammation of the scrotum. This case illustrates a result that is not at all unlikely to happen when operating on young children. There is such a tendency, in spite of the greatest care, for the dressings to get soiled, that suppuration not uncommonly takes place in the wound; fortunately a fatal termination only occurs in a very small proportion of such cases.

(2) (No. 14.) Umbilical hernia in a woman of thirty-nine. Death took place on the thirty-third day, from rupture of an abscess in the abdominal wall into the peritoneal cavity, causing acute septic peritonitis.

From a statistical point of view it is hard for a compiler to have to include this case as a death from the operation. The patient was perfectly well up to the thirty-second day, when an abscess, which had unfortunately formed in the subperitoneal tissue, opened into the peritoneum at the site of the recently made wound.

(3) (No. 24.) Left scrotal hernia in a man of fifty-one. Death on the eleventh day from delirium and local peritonitis. General disease of vessels was found at the post-mortem. The hernia had been a very large one, and the sac was removed at the operation.

(4.) (No. 62.) Right scrotal hernia in a patient of forty-nine. Death on the eighth day from delirium, venous hæmorrhage into the connective tissue, and subsequent suppuration. This, again, had been a very large sac, and although it was separated from the tissues around, it was not removed, but puckered up and made to close the canal. At the post-mortem there was found marked atheromatous change in the vessels.

The last two cases may be classed together, for they are much alike. They were both very large irreducible herniæ, giving their bearers a great deal of inconvenience from the inability of trusses to keep them in position. In both patients the arterial system was markedly diseased.

In (3) the delirium, which was due to previous alcoholic habits, was the direct cause of death, whereas in (4) death was due to septic absorption from suppuration taking place in the blood extravasated from the torn veins during the separation of the sac. In this latter case Stanmore Bishop's operation was done, and the disturbance of the tissues in the separation of the large sac no doubt led to the subsequent result. The folded-up sac at the autopsy appeared very sloughy, probably owing to defective nutrition from lesion of its vessels, and also from the pus effused round it.

These last two cases are examples of a condition in which the surgeon should be guarded in attempting any curative measure, for the death-rate is undoubtedly high. Mitchell Banks ('Brit. Med. Journ.,' December 10th, 1887) writes, "Of the five deaths, three occurred out of sixteen large herniæ." "These great herniæ are most serious to tackle. The operation is usually difficult and prolonged, and the dangers to be met and overcome are both numerous and various. It is not to be wondered at that the concomitant risk to life is also serious, and my only reason for attempting such hazardous cases was that the patients were useless creatures passing a wretched life, for an escape from which they were willing to incur even the greatest risks." Such was the condition of

affairs with regard to the cases above. The herniæ were such a nuisance that the patients could follow no occupation, nor could they enjoy life.

In operating on large herniæ there is one great point to be remembered, viz. that the risk is much increased by the removal of the sac. This takes a considerable time to do, prolonging the operation and adding materially to the shock; and, in addition, the marked disturbance of tissues in the process of separation, with possible tearing through of veins, prepares a fit soil for the development of the micro-organisms which cause septic intoxication or infection. What should be done in these cases is to divide the sac only at its upper part and close it off from the peritoneal cavity, leaving the lower part *in situ*.

HYDATID CYST BETWEEN BLADDER AND RECTUM.

RETENTION OF URINE; SURGICAL KIDNEYS;
DEATH.

By JOHN R. LUNN, F.R.C.S.ED.,

MEDICAL SUPERINTENDENT, ST. MARYLEBONE INFIRMARY, NOTTING HILL.

THE following case is of sufficient rarity that its record should possess some surgical interest.

Robert R—, æt. 66, a newsagent, was admitted into St. Marylebone Infirmary on October 29th, 1889. He stated that he had some difficulty in passing water about a year previously, but had never been troubled by any urethral stricture. Three weeks before admission he suffered from retention, and was obliged to have the urine drawn off by a catheter. After this he could sometimes pass water freely, at other times it would dribble away. On one occasion when the catheter was passed, no urine came away, though he felt sure his bladder was distended. He suffered much pain about the hypogastric region from time to time, but was generally relieved by the use of the catheter.

On admission he appeared very ill. He complained of retention, his bladder was enormously distended, and his bowels were confined. A No. 10 catheter was passed under an anæsthetic, but only drew off bloody urine; and as the instrument became blocked by blood-clots, the bladder was tapped above the pubes, and a large canula fastened *in situ*.

After the bladder had thus been relieved, a definite swelling

was still to be felt in the abdomen above the pubes. On examination by the rectum, nothing was detected except that the trigone was tender when pressure was made with the finger. The tube was removed from the bladder after four days, as the man was then able to pass urine by the urethra. The bladder was washed out night and morning, and the patient made an uninterrupted recovery. On November 23rd it was noted that the bladder could be completely emptied by passing a catheter, but there was still some dulness on percussion in the hypogastric region, and a slight prominence to the right of the median line. The urine at this time was again alkaline, and contained a trace of albumen. The patient asked to be discharged on April 17th, 1889, and said that he had never felt better in health. He was readmitted August 6th, 1890, and appeared very ill, temp. 101.2° ; tongue furred; pulse 120, very quick and small; expression of face anxious. The bladder was again much distended, dulness extending up to the umbilicus. As no catheter could be passed, the bladder was aspirated above the pubes, and forty ounces of urine containing pus, albumen, and blood were drawn off. The evacuation of the bladder gave immediate relief, but it was again noted that some dulness remained above the bladder after the water had been removed. On examination by the rectum, the trigone was still tender, and a large soft mass could be felt between the rectum and bladder, partly screening the latter. The prostate was not notably enlarged. The urine had to be drawn off several times in the day. The temperature became very hectic, diarrhœa set in, followed by coma, and the man gradually sank, dying on August 9th.

At the post-mortem, thirty hours after death, the right lung was found adherent to chest wall, but the lung substance was healthy; no fluid in thorax. On opening the abdomen the bladder was seen pushed forward by a large tumour, to which the intestines were adherent. The growth lay between the bladder and rectum, and was strongly fixed to the floor of the pelvic cavity. It proved to be a hydatid cyst, triangular in shape, the base of the triangle looking upwards, and about the size of a child's head. On puncture a large amount of clear fluid came out, and the wall was seen to consist of an outside

membrane, within which was an opaque, white membrane about one eighth of an inch thick, containing clear fluid, with a large number of round white bodies, about the size of a large pin's head. Most of these were lying in the fluid, and a few were attached to the wall. Under the microscope they were found to consist of a number of scolex heads joined together, each head showing a mouth and circle of hooklets. The fluid was alkaline, sp. gr. 1·002. Faint trace of albumen present. NaCl $2\frac{1}{2}$ gr. to ounce. No sulphates or nitrates. No sugar.

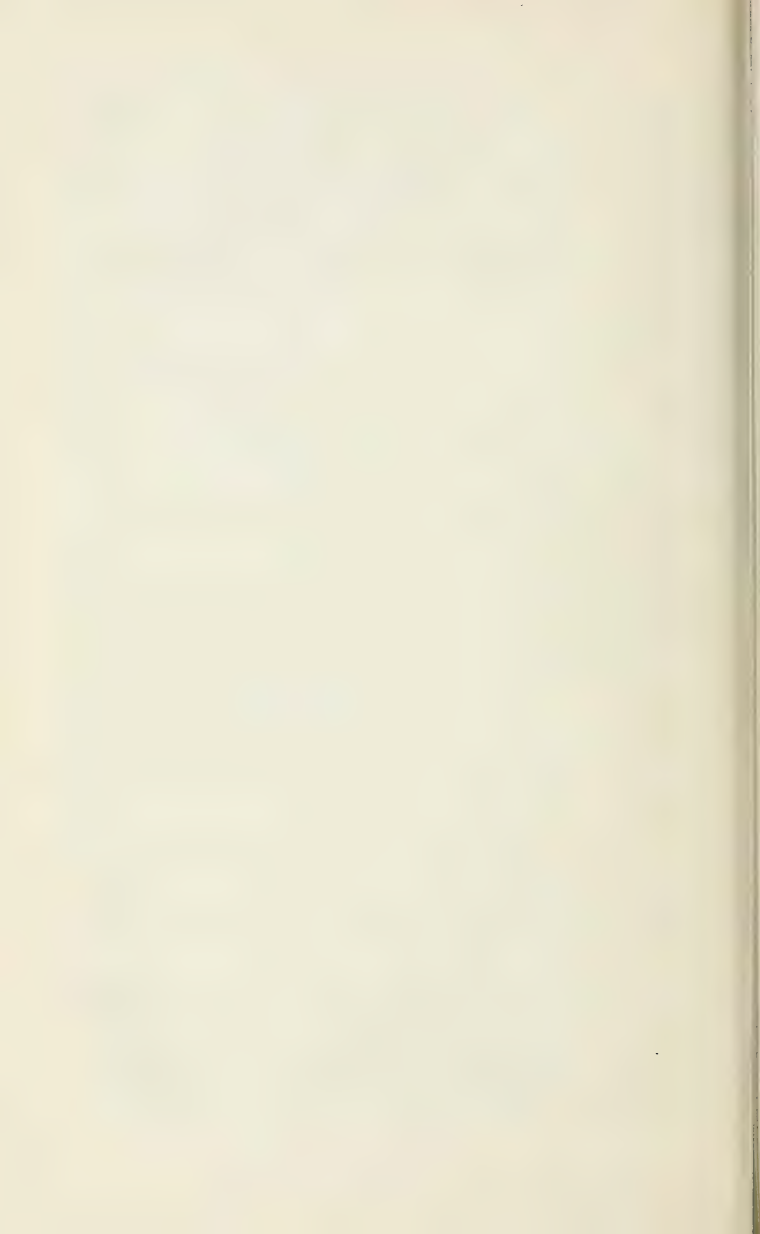
The anterior wall of the cyst was adherent to the bladder, the posterior wall to the intestines. The wall was very much thickened. The cavity was small, and one small diverticulum big enough to receive the end of the little finger was seen leading from the interior. The lining membrane was red and congested, marked in parts with streaks of blood. The orifices of the ureter were enlarged to about the size of a lead pencil, and their walls were thickened. There was no communication between cyst and bladder.

The left kidney was enlarged. The ureter leading from it was about the size of a man's thumb, distended, and with thickened walls, which showed signs of chronic inflammation and hypertrophy; the pelvis renalis was dilated, and contained pus. On section of the kidney substance several small cavities were found which contained soft earthy material, apparently phosphates. The cortical substance showed signs of acute inflammation, with small abscess cavities (surgical kidney). The right kidney and ureter were in a similar but less advanced condition of disease.

Remarks.—It is questionable how these cysts are developed in the pelvis. The right explanation appears to be that the embryo getting into the peritoneal cavity, and gradually gravitating downwards, eventually settles in the lowest part of the cavity.

Cases are on record in which hydatid cysts have been found between the bladder and rectum, but I cannot find any example quite similar to the one now reported. It was not until the autopsy that the real nature of the complaint was discovered.

(The specimen was shown at the Pathological Society, November, 1890.)



REPORT
ON A
SAMPLE OF CONDENSED MILK.

By ALBERT J. BERNAYS, PH.D.

IN the course of work under the Adulteration of Foods Act, both at St. Saviour's, Southwark, and at Camberwell, I have observed how very inferior are some of the samples of condensed milk, even to the point of injuriousness to life when taken as sole infants' food. It has been my good fortune on several occasions to suppress the sale of some of the worst.

The case I wish to place upon record is of great importance with regard to nutrition, and for this reason alone I report it. Good qualities of condensed milk are of the greatest value, and in very many cases can be employed by the poorer classes with a degree of safety which cannot be considered the case with ordinary fresh milk. Very few people are so well placed that they can drink unboiled milk with perfect safety to health, and unless milk has been fully boiled it is not safe. Condensed milk has not only the advantage of the mode of preparation, but the additional sucrose contained, if not excessive, brings it up more to the standard of human mother's milk.

The labels of many condensed milks are very misleading—in the case I now report, very much so. "This tin contains milk prepared and preserved with finest cane-sugar. It will be found to be cheaper than ordinary milk. For ordinary use add 4 to 5 parts of water. For infants add 8 to 15 parts of water, according to age."

Analysis gave the following results :

Water	.	.	.	.	24.34
Fat	.	.	.	.	0.71
Casein	.	.	.	.	18.91
Ash	.	.	.	.	2.37
Lactose	.	.	.	.	18.85
Sucrose	.	.	.	.	34.82
					100.00

Chlorides, calculated as sodium chloride, 0.34 per cent.

Milk-solids not fat . . . 40.13 „

Now, as all analysts are aware, the extraction of the fat in a milk requires additional care. Consequently the estimation of the fat was repeated, and with well-concordant results. We have in this sample a milk condensed to a quarter, and I gave it a certificate as made from *skim-milk*, and when diluted as directed for infants as insufficient for nutrition.

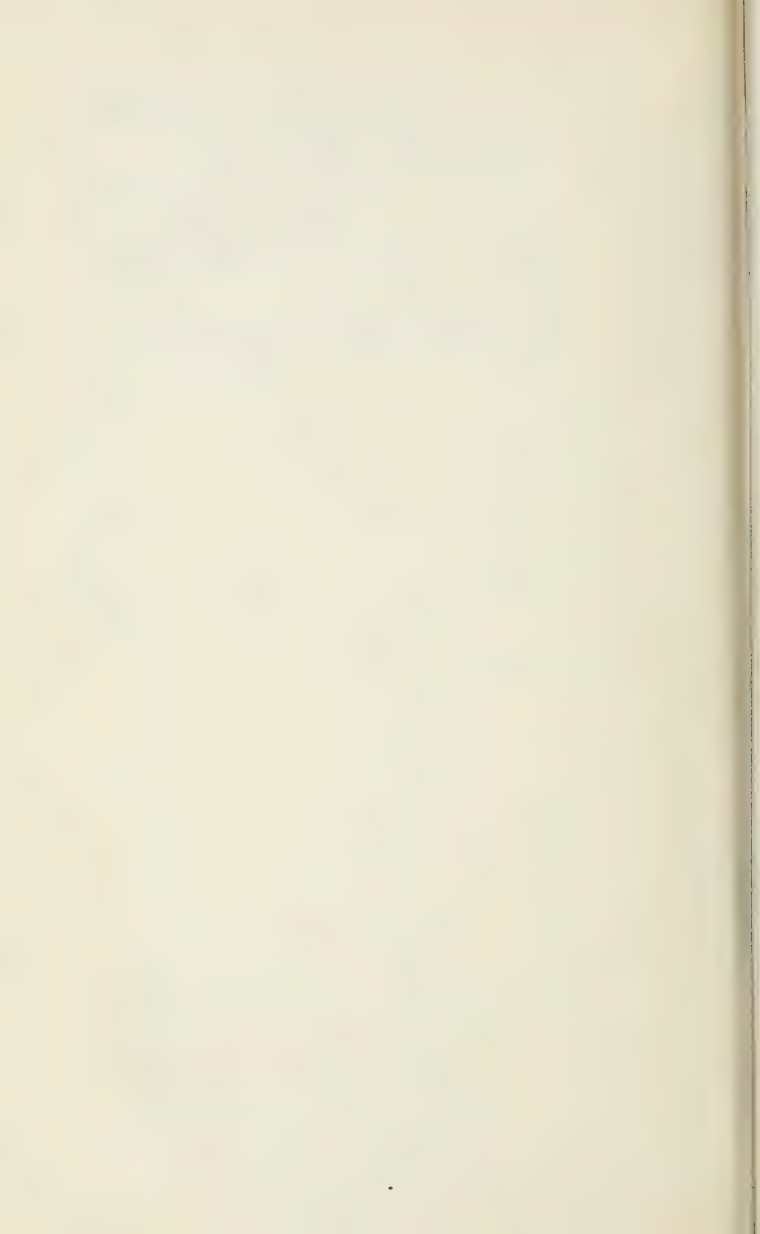
What resemblance this condensed milk bears to mother's milk, and to a cow's milk of fair quality, when diluted for infants' use according to the directions on the label, may be inferred from the subjoined statements.

					The condensed milk with 8 parts of water.	The condensed milk with 15 parts of water.
Water	.	.	.	.	91.60	95.27
Fat	.	.	.	.	0.08	0.04
Casein	.	.	.	.	2.10	1.18
Ash	.	.	.	.	0.26	0.15
Lactose	.	.	.	.	2.09	1.18
Sucrose	.	.	.	.	3.87	2.18
					100.00	100.00
Milk-solids not fat	.	.	.	.	4.46	2.51
Watered	.	.	.	.	49.00	71.00
					Mother's milk.	Cow's milk.
Water	.	.	.	.	88.60	87.50
Fat	.	.	.	.	3.50	3.20
Casein	.	.	.	.	2.70 to 3.5	4.40
Ash	.	.	.	.	0.20	0.70
Lactose	.	.	.	.	5.00	4.20
					100.00	100.00
Solids not fat	.	.	.	.	7.9	9.3

When we compare the amount of fat in the condensed milk, after dilution with, respectively, 8 and 15 parts of water, it will be seen to be, practically, reduced to nothing.

Although this case was fought by counsel for defendant company, and defended by counsel for the Camberwell Vestry before the sitting magistrate, the latter decided with heavy costs in favour of the Vestry. An appeal was threatened: it was thrice adjourned at the Newington Sessions, and was at last abandoned.

Most of the condensed milks are somewhat skimmed. Nessler's is the best of all with which I am acquainted.



INTUBATION OF THE LARYNX.

*A Dissertation for the Degree of M.D. in the University
of Oxford.*

By W. W. ORD, M.A., M.D., M.R.C.P.

A. History and Literature.

SEEING that it is less than ten years since this operation was first advocated in America, and that its introduction into this country is of far more recent date, the literature of the subject is of necessity at present limited. Catheterisation of the larynx was described and advocated several times during the early portion of this century, the first recorded case of a catheter being passed into the larynx being in 1801. Dr. Bouchat, of Paris, was the first who advocated the plan of leaving a tube permanently in the larynx until the disappearance of the symptoms of dyspnœa. He made use of a small, short, cylindrical tube, which was fixed in position by two rims, one of which rested above and one below the vocal cords: a thread was attached to the tube for the purpose of withdrawal. Dr. Bouchat was not successful with his cases, and as his plan, moreover, was bitterly decried by the advocates of tracheotomy, the practice fell into disrepute and was abandoned. This occurred in the year 1858, and it was not till more than twenty years later that O'Dwyer, of New York, commenced his experiments with intubation. He, it appears, was unacquainted with Bouchat's efforts and failure, and in the

course of a long hospital career conceived the idea of introducing a laryngeal tube for the relief of symptoms. His patients being drawn from a very poor class, and often not brought for treatment until too late, his initial success was not remarkable, but, being fully persuaded of the ultimate benefit of the operation, he persevered, as his results were no worse than those of tracheotomy. The tubes that he first began to use in 1880 were short metal tubes, covered with gutta-percha, much resembling Fuller's bivalve tracheotomy tube, except that they were straight: the head was made of wire. The next form of tube was also bivalve, with a solid head. The disadvantage of the bivalve tube was that it scraped the membrane off the sides of the larynx during introduction, and thus became choked. O'Dwyer next used a solid metal tube, not cylindrical in section, as was the case with Bouchat's, but elliptical, thereby relieving the vocal cords of unnecessary pressure. These tubes were at first short, barely reaching below the glottis; the next improvements were that they were increased in length, and that each tube was provided with an obturator, which could be screwed on to the introducer. It was found, however, that the smooth cylindrical tube was too easily coughed out, and that frequent re-introduction was necessary. A further modification was therefore made, consisting of an expansion about the centre of the tube, which would lie below the vocal cords, and prevent the expulsion by coughing unless the lumen of the tube became blocked. It is this form which obtains at present, and is regarded with most favour in this country: other modifications in the construction of the tube will be discussed later on.

O'Dwyer published his first fifty cases of intubation in 1887, and his second fifty in 1888. These cases occurred in his private practice, and were independent of his hospital cases.

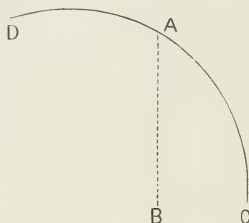
In 1888 Dr. Waxham, of Chicago, published a small volume on intubation, containing the descriptions of several modifications in the apparatus, and a digest of 150 cases. With the exception of the above-named no systematic works have appeared on this subject, and in this country there have been but a few communications to the medical press relating to it.

B. *The Operation.*

As regards armament, O'Dwyer's instruments have recently been fully figured and described in the medical journals,¹ and a full description is unnecessary here. An enumeration of the articles required will be sufficient. These are—gag, introducer, extractor, graduated scale, and set of tubes with obturators. The tube suitable to the age of the patient is chosen by means of the graduated scale. In operating two assistants are necessary, one to hold the child, the other to keep the head in proper position and manage the gag. The importance of an experienced assistant in the latter department cannot be over-estimated. The gag being placed in position on the right side of the mouth, the head must be held firmly between the hands and decidedly flexed, the chin being depressed towards the sternum. This brings the opening of the glottis much more within reach, introduction being much more difficult when the head is retracted. The operator then, holding the introducer, with the tube threaded and fixed in position, in his right hand, slides the tip of his left forefinger over the root of the tongue until he feels the epiglottis. Hooking this forward with his finger he will feel the orifice of the air-passage appearing as an opening in the anterior wall of the food-passage. He must then pass the tube into the mouth, and gently insert the tip between his finger and the epiglottis. Now comes the most difficult stage of the operation, the one in which the beginner fails. The tube as it is passed into the mouth and pharynx describes the segment of a circle. If this direction is persisted in when the tube is beneath the forefinger the tube will be passed into the œsophagus, in the same way that the tube of a stomach-pump is passed; but if the operator remember that the axis of direction of the trachea extends immediately *downwards* from the tip of his forefinger, and not *downwards and backwards*, which is the line of axis of the upper part of the œsophagus, he will overcome this difficulty. When, therefore, the end of the tube is resting between the forefinger and the epiglottis, the handle of the introducer must

¹ O'Dwyer, 'New York Medical Journal,' Aug. 8th, 1885; Waxham, 'British Medical Journal,' Sept. 29th, 1888.

be raised, so that the point of the tube, instead of continuing to describe the segment of a circle, turns off almost at a right angle from its original course. The annexed diagram, taken from Dr. Waxham's work, illustrates the method described above.

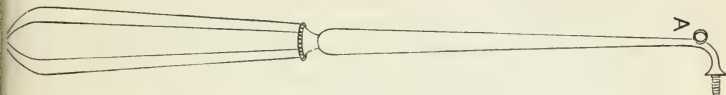


A represents the point where the progress of the tube should be arrested until it can be passed directly down towards B.

The tube should then be pushed home, and the introducer rapidly withdrawn, the tube being kept in position by the forefinger during withdrawal.

The above method is that which I have seen employed in cases under my charge, and in cases in which I have performed the operation. It differs in several respects from that described by the American authors. In the first place they introduce the gag on the left side of the mouth, in which position it is liable to interfere with the operator's right hand when performing what may be called the "tour de maître" in the operation. Next Waxham recommends that the head should be drawn back, or, in other words, extended by the assistant. This, however, has the effect of increasing the angle DAB in the above diagram, and thereby adding to the difficulty of the operation. Finally the American doctors are in the habit of using an introducer with a spring action working two claws, which shoot, or are supposed to shoot, the tube off the obturator. As a matter of fact, in practice this rarely, if ever, occurs, and the projecting claws become hitched against the forefinger as it is holding the tube *in situ*, and interfere with the rapid withdrawal of the introducer. A simple curved steel rod, as figured below, to which the obturator can be screwed, with a metal loop (A) at the bend, through which

the thread attached to the tube is passed and thereby kept clear of the tongue, is all that is required.



Modified introducer (half size).¹

c. *After Treatment.*

The immediate relief of dyspnoea, the improved colour of the face and lips, and the cessation of the patient's struggles will denote that the tube is in its proper position. The introduction of the tube is followed by a fit of coughing, which possesses a peculiar timbre of its own, and which when once heard will always be recognised. It may happen that this initial fit of coughing will expel the tube, but in the majority of cases the cough is ineffectual, and I may also say in the majority of cases the patient sinks into a tranquil sleep—a striking contrast with its appearance a quarter of an hour before. Of course, if the mischief have descended along the trachea and into the bronchial tubes, the change will not be so complete; but even in such cases there is temporary relief, due to the removal of the laryngeal obstruction. The child should be put into a tent-bed, and the steam kettle should be constantly used. If there be membrane visible on the tonsils or pharynx, this should be treated frequently with a hand spray. There have been many formulæ for these sprays, chiefly containing drugs of a solvent and antiseptic character. The spray that I have found most valuable in a large number of cases that I have personally treated is as follows:—

℞ Sodii Salicylatis, gr. xl;
Glycerini Acidi Carbolici, ʒj;
Aquæ destillatæ, ʒj. Fiat nebula.

This spray favours the detachment of the membrane in a remarkable manner. The operator may set himself to work on a particular patch of membrane, and literally peel it off.

¹ Invented by Mr. Staveley, and figured by him in the 'Lancet,' Jan. 1890.

The question of feeding is the most important in the after treatment. In some cases the tube at first seems absolutely to deprive the child of all power or desire to swallow—not, I believe, by causing a mechanical obstruction, though this naturally it does to a certain extent, but by giving rise to some form of reflex inhibition. In these cases it is useless and dangerous to press ordinary feeding by the mouth, and recourse should be had either to the nasal tube or to rectal alimentation. It will be found that in a few hours, after the novelty of wearing the tube has worn off, the symptom will pass away, and the child will ask for drink.

Waxham, in his treatise on this subject, lays great stress on the irritation caused by liquid food, a portion of which when ingested passes down the tube into the trachea, producing cough, and leading to broncho-pneumonic complications. His words on the subject are—"The greatest objection that has been raised to intubation has been on account of the difficulty in swallowing. Children with diphtheria do not relish solid or semi-solid foods, they crave liquids; and these they cannot take on account of the violent coughing that they produce by dropping through the open tube."

And again he says, "The difficulty of swallowing liquids has been so great that some have abandoned the operation, declaring that they would not again use them (the tubes) until they were so modified as to enable the patient to drink and to allay the thirst which is often the cause of the greatest suffering after the operation. Others, again, entirely prohibit the use of liquids of any description during the few days in which the tube is worn."

In order to overcome this difficulty Waxham devised a form of artificial epiglottis, made at first of india-rubber and afterwards of metal, which was attached to the ordinary form of tube. This epiglottis was controlled by a spring of gold wire fixed in the upper part of the tube. He claims with this that a child can take any amount of liquid nourishment with impunity.

From my experience of a comparatively small number of cases this appears to be a needless complication of an already complicated set of apparatus. I have had children under my care, as will be seen in the list of cases below, of ages varying

from eleven months to thirteen years, in none of whom after the initial stage noted above has the irritation caused by liquids been sufficient to induce me to discontinue that mode of feeding; and in no case have I observed lung complications that could at all be referred to the invasion of the lungs by liquids through the tube. In case No. 14, quoted below, an infant aged eleven months wore a tube, without an artificial epiglottis, for four weeks, during which period it was fed entirely on liquids. In this case not only did no lung complications arise, but a large patch of broncho-pneumonia cleared up with the tube *in situ*. Further, I think that any interference with the normal action of the true epiglottis, however delicate the spring in the artificial organ may be, is undesirable. That the true epiglottis does fold backwards and occlude the tube to a certain extent can be easily ascertained by the finger when the tube is in position.

What I think to be a reasonable explanation of the fact that the cases I have seen swallow liquid food easily is as follows. Dr. Waxham's cases appear to have taken their liquids from a cup, and, as he says, "some of the liquid will trickle into the tube before the effort is made to swallow." In all the cases of intubation under my care the patients have taken their liquid nourishment from an ordinary china feeder, with a spout resembling that of a teapot; the food is not poured into the mouth, but the child is encouraged to suck the liquid. The action of suction does away with the period of rest intervening between the time of taking fluid into the mouth and the commencement of deglutition; the fluid is carried in an unbroken stream through the mouth, pharynx, and so into the œsophagus, passing over the orifice of the tube so rapidly that little or none trickles into it. In all cases there is a short, dry, momentary cough after swallowing, but this equally obtains with solid and liquid foods. I think that with children of fairly advanced age solids should be given as soon as possible, but I believe that in children under two years much harm may be done by forcing down solids, and that liquid nourishment, if administered by the above plan, will be found to be the most conducive to the patient's welfare.

The invasion of the lungs by diphtheria after intubation does not materially differ from that which occurs after tracheo-

tomy, and I do not propose to discuss it here. The same may be said of the internal administration of drugs.

There comes now a point for grave consideration, and that is the performance of tracheotomy after intubation. I take it that if the doctor finds it necessary to perform tracheotomy after intubation, it means either that the case has not been taken in time, or that the membrane continues to spread rapidly; in either case the prognosis is of the gravest. It may be that in introducing the tube the diphtheritic membrane has been forced down before it and jammed in the trachea, rendering expulsion by coughing impossible. Immediate tracheotomy will certainly relieve, and possibly save the patient. I have never seen this complication occur. I have seen no case of diphtheria recover in which recourse has been had to tracheotomy after intubation. I do not on this account hold that the secondary operation should not be performed. On the contrary, I should imagine that a certain small percentage of cases would be benefited by this procedure. In all cases in which I have seen this done there has been temporary relief, caused by the expulsion of membrane through the tracheotomy tube; but from the nature of these cases I am of opinion that they would not have recovered had tracheotomy been resorted to instead of intubation in the first instance. The presence of an O'Dwyer's tube in the trachea materially increases the ease and rapidity of the operation. Unfortunately, in none of these fatal cases have I been able to obtain leave for a post-mortem examination.

The time for the removal of the tube, as in the sister operation of tracheotomy, must be determined by the severity of the case. The shortest time I have kept the tube in position was twenty hours; this was in a case of membranous laryngitis occurring in the onset of measles. In a diphtheritic case the longest period has been nine days; while in one case, not diphtheritic, the tube was worn for four weeks. It may be necessary to remove the tube for cleaning, or to permit of membrane not completely occluding it being coughed up. It sometimes happens that the tube is coughed out accidentally, and the necessity for wearing it longer is found to have passed away. I usually make a practice of performing an experimental removal of the tube on the fourth day.

In the extraction of the tube I have followed a different plan from that advocated by American authors. Waxham has made a practice of removing the thread attached to the tube after the latter has been once securely fixed in position, as he considers that the presence of a thread in the mouth is a source of irritation. My experience is that in a short time the patient becomes as accustomed to the thread as he does to the tube, and ceases to notice it. The chief argument in favour of leaving the thread is the rapidity of extraction that it affords. Only those who have had to use O'Dwyer's extractor can appreciate the difficulty of passing it into the orifice of the tube, especially when that is in the larynx of a small child. The fact that Waxham says that an anæsthetic must often be given to facilitate his method of procedure is an argument in favour of the opposite plan. He also relates cases in which the tube has "repeatedly" been coughed out of the larynx and swallowed, fortunately without evil results in his patients. Another accident which may occur is that the tube may be passed below the vocal cords, and if the thread is withdrawn the consequences are of course serious. In case No. 3 the fact that the child could phonate caused the diagnosis that the tube had passed below the cords, and this was confirmed by the difficulty of its withdrawal by the string. Waxham records a case in which the tube, from which the thread had been removed, completely disappeared, and was found post mortem in one of the bronchi. If the thread is allowed to remain, and the free end is looped round the ear and carefully fastened with strapping, the patient is relieved from these dangers; the tube can also be rapidly and readily withdrawn. Some patients, however, persistently obviate all precautions in this direction by biting through the thread, when recourse has of necessity to be made to the extractor. If dyspnoea recurs after the removal of the tube, the patient if fairly advanced in years evinces the strongest desire for its re-introduction. I have seen a boy of five from whom the tube was removed in the hope that the necessity for its presence had passed away, and in whose case it became necessary to again pass the tube, get out of bed and cross the ward to the operator, who was seated in a chair preparing the instruments for re-introduction.

D. Comparison between Intubation and Tracheotomy.

In drawing this comparison I do not wish to advocate the supersession of tracheotomy by intubation. The percentage of recoveries in diphtheritic cases varies at present but little in the two operations, the balance being in favour of intubation. Jacobi collected 1024 cases of tracheotomy with a recovery of 21·48 per cent. Waxham collected a series of 1072 cases of intubation performed in the United States, in which the recovery was 26·77 per cent. That intubation has certain advantages which may account for its better percentage of success I shall endeavour briefly to point out. The first, and I think the most important argument is that the permission of the parents can be obtained much more easily for intubation than for tracheotomy. Rightly or wrongly, there is a great prejudice against the latter operation, especially among the poorer classes, who have a superstitious dread of what they call "having the child's throat cut." Even among the educated classes, from the fact that we can assure the parents that there will be no breach of surface, leave is obtained at a period in the case which is very much more favorable to the patient's recovery than if postponed to the time when the supervention of extreme dyspnœa at last extracts an unwilling consent. The operation itself, even in the hands of a beginner, can be performed very much more rapidly than tracheotomy by the most skilful operator: there is no shock and no loss of blood; there is no open wound liable to infection, the healing of which is always tedious, and often complicated by adhesion of the cords, &c.; no anæsthetic is required, and the air entering the lungs has the advantage of being warmed in the ordinary way instead of passing straight into the trachea. The fact, often mentioned in the cases below, that when from the occlusion of the tube by membrane, or from other reasons, the tube is coughed out, the return of dyspnœa is not immediate, should be noted. Usually there is complete relief from dyspnœa for a period varying from half an hour to an hour, although in one case the tube had to be replaced in ten minutes. This renders the operation a more possible and justifiable one among the poor in their own homes, as it allows time for the doctor to be sent for, whereas the poverty and the impossibility of

affording the necessary skilled nursing would preclude the possibility of performing tracheotomy successfully. It seems probable that the temporary relief is caused by the displacement of the œdema of the cords by pressure of the tube.

It appears to me not unreasonable to attribute the 5 per cent. advantage that intubation has over tracheotomy to the points to which I have endeavoured to draw attention.

E. Record of Cases.

These cases were treated in the Victoria Hospital for Children.¹ I was responsible for the medical charge of all these cases. Some of them were intubated by the House Surgeon, some by myself. The first series are diphtheritic cases.

CASE 1.—D. H—, a boy æt. 3 years and 4 months, was admitted to the hospital on April 6th, 1889. Had had a "feverish attack" on April 1st, "shortness of breath" on April 3rd; had a "choking fit" and became livid on April 6th. When admitted at 10 p.m. he was suffering from marked dyspnœa and retraction of lower ribs, cyanosis, and crowing inspiration. Intubation was performed immediately with marked relief. He was asleep within a quarter of an hour of his admission to the hospital. Temp. 100·8°.

April 7th.—Slept quietly all night; fit of coughing at 9.40 a.m., when the tube was expelled; continued to breathe quite easily for two hours, when the dyspnœa recurred and the tube was replaced; during the introduction of the tube a cylindrical cast of the trachea was coughed up. Temp. 101°.

8th.—Tube removed at 10 a.m. The cough continued croupy for some days, but the tube was not again required.

May 2nd.—Discharged recovered. In this case intubation was performed twice; there was a period of two hours' relief after the tube was coughed out; the tube was *in situ* for thirty-four hours.

CASE 2.—G. T—, a girl æt. 4 years and 6 months, was admitted to hospital on April 12th. Previous history:—Had suffered from enlarged tonsils for about ten months; had had

¹ The first six cases were included in the paper published by Mr. Staveley in the 'Lancet,' Nov., 1889.

a sore throat for a week, and had been breathing badly for twenty-four hours. When admitted at 11.15 a.m. the child was fat, with blue lips, crowing inspiration, and retraction of ribs. Fauces and pharynx were covered with membrane. After intubation the child coughed for a few minutes, then complete relief followed. Temp. 99° . At 10.20 p.m. there was frequent coughing with much mucus, and the tube was removed; some membrane and much mucus were coughed up. The dyspnoea returned and the tube was replaced after one hour.

April 13th.—Passed a good night; took food freely. Temp. 103° .

14th.—Breathing quite easy; tube removed, but after one hour dyspnoea returned and the tube was replaced.

16th.—Tube coughed up during the evening, and dyspnoea recurred very rapidly; tube replaced in fifteen minutes.

19th.—An attempt was made to get her to do without the tube, but she got frightened, and it had to be re-inserted an hour afterwards.

21st.—Tube taken out, and was not again required.

May 3rd.—Discharged well. Intubation was performed five times; the tube was coughed out once and removed three times, once for the purpose of cleaning, before it ceased to be required. It was worn altogether for nine days.

CASE 3.—T. G.—, admitted April 13th. Had been an out-patient for chronic bronchitis for three months. On admission at 9 a.m. there were loud snoring rhonchi and signs of blocking of larger tubes. Fauces congested; no membrane seen. Temp. 99.8° . At 8 p.m. an attack of croupy dyspnoea came on, which increased towards midnight. An emetic was administered by the nose tube, followed by a violent cough, and a large piece of membrane was expelled. Intubation was performed at 1.45 a.m. on April 14th; after a fit of coughing he quieted down and slept well. At 11.30 a.m. retraction returned, and inspiration was croupy. An examination was made, and it was found that the tube had slipped below the vocal cords. It was withdrawn by means of the attached thread, and a larger tube inserted with relief.

April 15th.—Tube coughed out at 5.15 a.m.; replaced at 6.15 a.m. Temp. 104.4° .

16th.—Breathing rapid but easy, taking food freely ; crepitation at left base.

17th.—Condition unaltered. Temp. 102.6° .

18th.—Tube coughed out at 5 a.m. ; replaced at 5.50 a.m.

19th.—Tube coughed out at 2.15 a.m. ; replaced at 3.15 a.m. ; a large quantity of mucus expelled. Coughed out again at 10.10 a.m. ; replaced at 11 a.m. At 5.40 the breathing was very bad, with much rattling in the chest. Tracheotomy performed with great relief for a time ; coughing ceased and the child fell asleep. Temp. 105° .

20th.—Died at 9.15 a.m. No necropsy was allowed. This was evidently a case which was brought too late to the hospital.

CASE 4.—M. M—, a girl *æt.* $4\frac{1}{2}$ years, admitted April 20th. She had been an out-patient for strumous ozæna for six months. Had no difficulty of breathing till the day previous to admission, when she awoke at 4 a.m. with much stridor and rapid breathing. Emetics were administered without relief. On admission at 4.30 p.m. she was breathing very rapidly, with stridor and retraction of ribs ; colour and pulse good. Glands at the angle of the jaw enlarged ; tonsils not enlarged ; no membrane seen. Temp. 99.4° . She was placed in a steam tent, and rapidly improved ; the stridor diminished, and the retraction disappeared. At 11 p.m. all these symptoms returned. An emetic was administered, followed by free vomiting, but without relief. At midnight she became cyanosed, and commenced to sweat profusely ; at 12.30 a.m. she was intubated with immediate and complete relief. Temp. 99.4° .

April 21st.—Slept seven hours and a half after intubation ; the tube was coughed out at 12.45 p.m. and found occluded with membrane. Breathed well till 2 p.m., when dyspnoea occurred and the tube was replaced. Temp. 103.2° .

22nd.—Slept ten hours after intubation. Numerous small pieces of membrane coughed up through the tube. Temp. 102° .

23rd.—Breathing quite easy ; the child bright and lively.

25th.—Tube coughed out and not again required.

May 17th.—Sent out well, with exception of slight return of fluids through the nose and some hoarseness of voice. This girl was intubated twice ; tube was worn three and a half days.

CASE 5.—Fred. S—, *æt.* 16 months, admitted May 8th ; one

sister was admitted on May 1st with nasal diphtheria. Eight days previous to admission he was sick, had constant cough, and aphthous patches were noticed on the tongue. On the morning of admission his breathing became stridulous, he became cyanosed, and the mother thought he had whooping-cough. On admission he presented the appearance of an ill-nourished child, suffering from frequent croupy cough, but no paroxysms resembling pertussis. Retraction of lower ribs and falling in of supra-sternal notch during inspiration. Aphthous patches on tongue; one small follicular patch on right tonsil; glands at angles of jaw enlarged. Temp. 99°. Tracheal sounds conducted all over the chest.

May 9th.—Constant cough with attacks of dyspnœa, during which patient cannot lie down. No membrane seen.

10th.—Condition about the same in the morning, but towards evening his breathing became worse, and he refused his food; was fed by the nose. At 10.45 p.m. he had not slept all day; very restless with anxious expression, sitting up and clutching at the sides of the bed; marked stridor and retraction; no cyanosis. Intubation was performed with complete relief, after a fit of coughing which lasted ten minutes; he then fell asleep and passed an excellent night, taking his food well.

11th.—There was much rattling below the tube, so it was removed, cleaned, and replaced after half an hour's interval. Did not take food so well, but slept continuously; respiration quite easy.

12th.—Passed a good night; tube coughed out at 11.30 a.m.; definite membrane on tonsils; stridulous breathing; tube replaced 11.40 a.m. Temp. 102°.

13th.—Breathing quite easy, but general condition very feeble. Temp. 102.4°.

14th.—Died with no return of dyspnœa with the tube *in situ*. Post-mortem examination not allowed.

CASE 6.—G. H.—, a boy æt. 5, admitted April 30th. History as given by mother:—"Had measles recently and suffered from sore eyes ever since. On April 28th seemed poorly and had a bad cough." During the afternoon of the 30th he had an attack of dyspnœa and became blue; an emetic was given without benefit. At 9.15, on admission,

patient, who was very fat, had a livid face, blue lips, stridor, and marked retraction. No membrane seen; cervical glands enlarged. Temp. 102.6° . Intubated immediately; vomited some blood-stained mucus, and after a violent fit of coughing quieted down and colour returned. 10.10 p.m. tube coughed out; replaced 10.23 p.m.

May 1st.—Passed a good night; the temperature rose to 104° , and a profuse measles rash appeared. Trace of albumen in urine. 5.30 p.m. tube was coughed out, and was not required again.

7th.—Sharp attack of acute follicular tonsillitis.

10th.—Some fine shreds of doubtful diphtheritic membrane coughed up; urine contained one sixth albumen.

21st.—Albumen had disappeared, and he was discharged well on the 25th.

In this case some operative interference was necessary, owing to the severity of the dyspnoea; the tube was worn only twenty hours, the shortest period in this series. The dyspnoea may possibly have been caused solely by the laryngitis of the onset of measles, but taking the membrane and the albuminuria into account I believe that diphtheria was coexistent.

CASE 7.—John S—, æt. 6 months, admitted September 19th; had been an out-patient for diarrhoea and wasting since September 2nd; on September 16th, when seen it had a temperature of 100° ; running from the nose, no membrane in throat, slight bronchitis. On admission, an extremely emaciated, feeble child; membrane on both tonsils; respiration rapid, with retraction of lower ribs; no cyanosis. Temp. 99.6° . At 10 p.m. the temperature was 102.8° ; retraction was increased with some cyanosis; intubation was performed; child at first ceased to breathe, but it rallied and the retraction diminished; child gradually sank, and died at midnight.

CASE 8.—Mary N—, æt. 5 years, admitted September 18th. Illness began on the preceding morning with hoarseness; in the afternoon she had dyspnoea and became cyanotic. On admission at 1 a.m. she had membrane on right tonsil, with hard glands in the neck; there was a good deal of dyspnoea, cyanosis, and retraction, which greatly improved when she was put in a steam tent. At 12.30 p.m. the dyspnoea in-

creased, and being very cyanotic she was intubated. She had immediate relief and went to sleep.

September 21st.—Some cough to-day; a trace of albumen in the urine.

22nd.—Tube removed at 10.30 a.m. and not required again.

Discharged on October 3rd quite recovered; the albuminuria had disappeared. Duration of intubation ninety-four hours.

CASE 9.—Edith N—, sister of preceding case, æt. 6 years, admitted at 10 a.m. on September 18th. Had been hoarse on the morning of the 17th, and had dyspnœa in the afternoon, which passed off at night. On admission there was membrane on the right tonsil and hard glands in the neck; there was great dyspnœa, with cyanosis and retraction. She was intubated directly with immediate relief, and at once fell asleep.

September 19th.—Passed a restless night; a good deal of cough; rhonchi over both lungs; a trace of albumen.

21st.—Cough continues, but lung signs better; still a trace of albumen. Tube was coughed out at midday and not again required. Went out quite well on October 3rd; albuminuria had disappeared. Duration of intubation seventy-four hours.

These two sisters both bore their tubes very well. They went out on the fifteenth day in good health, a result I suppose unattainable with tracheotomy.

CASE 10.—Herbert S—, æt. 6½ years. Seven days, previous to admission the boy was seized with dyspnœa, and was intubated outside the hospital. No absolute diagnosis of diphtheria was then made. The tube was twice removed for cleaning during the week, but had to be replaced. Some bronchitis set in, and he was admitted at 9 p.m. on September 18th with the tube *in situ*. On admission there was extensive deposit of membrane on soft palate and tonsils, a good deal of general bronchitis; urine contained half albumen.

September 20th.—General condition had improved; a trace of albumen.

23rd.—Temperature rose to 103.8°; signs of pneumonia at both bases; scarlatiniform rash on chest.

24th.—Lung signs improving; breathing easier; temp. 102°; albumen one third.

25th.—Tube removed and not again required.

27th.—Temperature normal ; lungs quite clear. The albuminuria completely disappeared, and he was discharged on October 5th.

This case is interesting from the fact that it was first performed in private practice; had it been a favorable case like the two preceding all would have been well, but the supervention of the lung mischief rendered skilled nursing imperative, and compelled the removal of the case to the hospital.

CASE 11.—Charles M—, æt. $6\frac{1}{2}$; admitted September 30th. Had had sore throat for five days, with a history of an attack of “croup” on September 25th. On admission there was membrane on both tonsils, with marked cyanosis and dyspnœa. He was intubated, but coughed out the tube in ten minutes; it was replaced. Temp. 100° .

October 1st.—Restless night, with much rattling below the tube. Temp. 103° . Takes food badly, but drinks water greedily; slight bronchitis; urine contains one third albumen. 5 p.m. tube removed to be cleaned; urgent dyspnœa supervened, and it was returned in fifteen minutes with complete relief; midnight temp. 102° ; restless with constant cough; refused food, and was fed through a nose-tube.

2nd.—Condition unaltered; retraction of ribs came on at 5 p.m., when tracheotomy was performed, with the O'Dwyer's tube *in situ*; a large quantity of membrane feathered up from the trachea; breathing remained rapid, but the retraction disappeared. Died at 2 a.m. on October 3rd, no post-mortem examination allowed.

This concludes the list of diphtheritic cases. Of the cases above recorded seven recovered and four died, but the average age of the children has been high. Taking the percentage of all the cases which have been performed in this hospital since the practice was established here in January, 1889, the percentage of recoveries has been 43·7. The average age of the cases that died was two years, of those that recovered five years—figures that approach very closely to those in successful cases of tracheotomy.

There are three cases which I have seen, in which although diphtheria was not present, the value of intubation is well shown.

CASE 12.—Florence P—, æt. 13, was a patient in this hospital during the early part of the summer of 1889 for a sarcomatous growth in the glands of the throat, a portion of which was removed. She was readmitted on August 27th with urgent dyspnœa. The growth had increased rapidly, and was embracing the trachea in front and on both sides, causing compression. Tracheotomy was at once decided on. Chloroform was administered, but after a few inhalations the patient ceased to breathe. O'Dwyer's tube was passed, and respiration returned. The administration of chloroform was resumed, the tracheotomy, a long and tedious dissection, was successfully performed, and the child is now living and much improved in health, a great portion of the tumour having sloughed and come away through the tracheotomy wound. The above case speaks for itself. I have seen an analogous case with an intra-laryngeal growth, in which dyspnœa recurred; previous tracheotomies complicated the operation, and the child died before the trachea was opened; its life might possibly have been saved by intubation.

CASE 13.—Edward T—, æt. 3, was admitted on October 7th suffering from dyspnœa; there was lividity and considerable retraction of lower ribs. The boy was a strong and self-willed little fellow, and all attempts at laryngoscopic examination failed. He improved with rest until November 9th, when he was seized with sudden dyspnœa, cyanosis, and profuse sweating. Intubation was performed at 6.15 p.m. with complete relief of symptoms; he coughed for some minutes, and then went off to sleep; he took his food perfectly. Forty hours after introduction he managed to pull his tube out, and the necessity for its presence was found to have passed away. It seems probable that the boy is suffering from some intra-laryngeal growth, probably papillomatous.¹ A temporary intubation is far preferable to tracheotomy in his case, with the attendant risks of fungation of the tumour, in addition to causing matting of the tissues unfavorable to future operation, if such be decided on.

CASE 14.—Annie M—, æt. 11 months; had been attending as an out-patient with rickets and syphilis; had had dyspnœa for some time.

¹ This subsequently has proved to be the case.

Admitted October 23rd with dyspnœa, retraction of lower ribs, and râles over both lungs; it was sent in as a probable case of syphilitic laryngitis. The dyspnœa increased, and at 11.30 p.m. intubation was performed with immediate relief; the usual cough occurred after passing the tube, but the patient soon fell asleep.

24th.—Passed a good night; no dyspnœa nor retraction; took liquid food well; was put on antisyphilitic treatment.

26th.—Tube removed; dyspnœa recurred and tube was re-introduced fifteen minutes later; marked tubular breathing at right apex. Temp. 102·8°.

28th.—Crepitation over upper part of right lung; temperature falling; no dyspnœa; takes food well.

November 1st.—Right lung clearing rapidly. Tube removed at 10.30 a.m.; no stridor nor retraction of ribs; takes food well.

3rd.—Tube re-introduced on account of return of dyspnœa.

The tube was removed experimentally on November 8th, and again on November 18th, but in each case had to be replaced within an hour.

On the 24th the tube was removed, with no further necessity for re-introduction.

This case is interesting (1) on account of the age of the child, which would almost prohibit tracheotomy even in a non-diphtheritic case; (2) in the fact that this child had the tube *in situ* for four weeks, during which time it was fed entirely on liquid food, which it took readily and without distress: it was made to take its food by suction.

This completes the list of cases of intubation of which I have had personal experience. Having had, during a year's residence at St. Thomas's Hospital, an opportunity of watching a large number of cases of diphtheria and of performing tracheotomy, I have no hesitation in saying that, although the cases of intubation related above had no better success than I gained in tracheotomy, yet as a result of my experience of the former operation I should always, where possible, perform it in preference to the latter. Even if the percentage of successful cases of intubation were far less than it is, I think that, considering the terrible mortality that results from the accepted surgical treatment of diphtheria, both intubation

and any other method that may in the future be suggested for relieving this awful scourge should be fully tried on its merits by all who may have the opportunity of so doing. This method of procedure in London is as yet in the hands of few, but every day I see fresh admirers of its rapidity and successful results, and I feel sure that before long it will be accepted as an ordinary form of operation by the profession in this country.

THE DANGERS OF INTUBATION IN DIPHTHERIA.

BY H. G. TURNEY, M.A., M.B., M.CH., M.R.C.P.

THE following cases are selected from a series of twelve which have been under my immediate care either at St. Thomas's, or at the South-Eastern Hospital of the Metropolitan Asylums Board. For permission to refer to those occurring at the latter institution, which comprise all but the first two, I am indebted to Dr. MacCombie. My reason for selecting these particular cases is that they are all more or less illustrative of dangers which may have to be met in the practice of intubation. The other cases of the series I will dismiss in a few words: in one secondary tracheotomy was performed, and the patient recovered; the rest died within about twenty-four hours of the insertion of the tube, and neither their progress nor the autopsies where obtained present any points of interest. The whole number extend over a period of eighteen months, and are only numbered consecutively for convenience of reference in this paper.

CASE 1. B—, æt. 3 years, July, 1889. On admission membrane seen on the fauces; stridor in breathing and retraction of the lower ribs. I decided to intubate, but failed at the first attempt to insert the tube; at the second trial I succeeded in getting the tube into the larynx, but in with-

drawing the inserter accidentally dragged it out again. The child then made a long inspiratory effort, but no air seemed to enter the chest. At first I thought that the contact of the tube had set up spasm of the glottis, and accordingly tried to induce respiration by ordinary methods. These failing, I resorted to tracheotomy; but though artificial respiration was kept up for some time, all efforts to restore animation were fruitless, the result being due partly to my own tardiness in operating, and partly to my not having instruments in readiness.

Though, unfortunately, an autopsy was not obtained, I feel convinced that in this case I pushed the membrane down the trachea, and so caused the sudden stoppage of breathing. The child was not exhausted by prolonged manipulation; it was not suffering from syncope, as was evidenced both by the colour of the face, and the inspiratory effort which occurred after the removal of the tube. Such an accident is said by some advocates of intubation to be an excessively rare occurrence, but I find a Spanish observer, himself an ardent intubator, giving (in the '*British Medical Journal*,' November 5th, 1890) one instance of it in his last six cases, and, moreover, stating that this is the fifth example which has occurred in his practice. At all events, whether the symptoms in my case were due to plugging of the trachea with membrane or not, it is well that those intending to practise intubation should be aware of the fact that respiration may suddenly and finally stop during the process. In all cases the appliances for tracheotomy should be ready, as if that were the operation to be performed; and on the suspicion of this accident the trachea should be at once opened, all efforts at restoration short of this being inevitably futile.

CASE 2. —, æt. $3\frac{1}{2}$ years, February, 1890. This child had been intubated for diphtheria two days before she came under my charge. Two days later the tube was coughed up and dyspnoea immediately set in. A nurse ran to find me at once, and I was on the spot within five minutes at most. The patient was lying apparently lifeless. I at once re-inserted the tube, even that operation exciting no sign of reflex action, and, to my great relief, signs of life before long reappeared.

On the following day the child again coughed the tube out, and again I was summoned in all haste. With the experience of the previous day fresh upon me, I hurried at my best speed, and arrived certainly within five minutes after the accident. I was greeted with the information that it was too late—the child was dead. As a last resort I performed tracheotomy, and again with artificial respiration the little patient came back to life. I am sorry to say that death occurred from syncope two days later during my temporary absence from duty.

Now for the moral of this case. Enthusiastic intubators tell us that their method is pre-eminently adapted for private practice, when tracheotomy would probably be out of the question. The first case, I think, shows that tracheotomy might have to be performed at a moment's notice and under the most unfavorable circumstances. The second proves that at any moment in the course of the treatment an accident may occur, which leaves the nurse, whether she be skilful or ignorant, utterly helpless until the arrival of the medical man, an accident which may end in death so quickly that the most speedy help may come too late. Suppose that a similar emergency happen after tracheotomy; even if the nurse be not experienced, she may, by a little trouble, have been taught what to do, and with the dilators in the wound may relieve the symptoms as efficiently for the time as the surgeon himself. Before I had any practical knowledge of intubation I was told the flattering tale, that after coughing up the tube the patient generally remained comfortable for some hours, and in any case for a reasonable time—in fact, that was the strongest argument for its universal application. The above though the most marked is far from being the only instance to the contrary that has occurred in my short experience.

I will now pass to a series of cases, the post-mortem examinations of which illustrate what seems to me the chief danger incident to intubation, that is, ulceration due either to the pressure of the tube or the irritation of the string to which it is attached.

CASE 3. J. H—, æt. 3 years, August, 1890. Scarlet fever and diphtheria. Intubation performed within twenty-four

hours before death. Post mortem there was found to be extensive destruction of the left aryteno-epiglottic fold, and some superficial ulceration of the right. On the left side, in fact, there was a deep gutter at the side of the epiglottis corresponding to the course of the string. This was not due to the string being unduly tight, as I was already aware of the danger of ulceration, and was endeavouring to avoid it. I think that the ulcer was produced by the child continually worrying the string between its teeth. In several ways the string causes trouble: to prevent the child dragging the tube out its hands have to be tied, and even that precaution requires some care to be quite successful; while to the presence of the foreign body in its mouth the patient refers the discomfort due to the tube in the trachea, and naturally makes every effort to free itself. All this inconvenience, which I am quite sure seriously retards recovery, may obviously be avoided by giving up the string. But, for this to be done, a duplicate set of tubes should be in readiness, as there is considerable chance of the first tube being coughed up and then swallowed. Whenever this has happened, the tube has been passed without trouble about the third day; but in the meantime tracheotomy has to be performed. Of late I have altogether given up using the string, and am very well satisfied with the result. Extraction of the tube when required takes a little more time, but is really not attended with any difficulty, and the more comfortable condition of the patient is well worth the extra trouble.

CASE 4. A. C—, æt. 6 years, September, 1890. Diphtheria. Intubation eight hours before death. At the post-mortem larynx and trachea were found lined with a uniform sheet of membrane. At a point in the trachea corresponding to the tip of the tube the false membrane was fretted through in front, and there was a commencing excoriation of the mucous membrane immediately beneath.

CASE 5. S. H—, æt. 4 years, September, 1890. Intubation performed thirty-six hours before death. The post-mortem examination disclosed the presence of a shallow ulcer on the interarytenoid fold upon which the posterior horn of

the enlarged upper end of the tube rests. In the larynx itself there were symmetrical ulcers on each side below the true cords: that on the right side exposed the cartilage. At a point in the trachea at the level of the lower end of the tube in the middle line anteriorly the mucous membrane was ulcerated through, the floor of the ulcer being formed by two denuded rings of the trachea.

CASE 6. D. V—, æt. 5 years, August, 1890. The following is a short abstract of the notes taken from day to day:

August 9th.—Admitted with stridor and croupy cough, the back of the pharynx covered with thick membrane.

August 10th.—Much dyspnœa; intubation performed with immediate relief.

13th.—Breathing has been quiet, and thickened food has been taken fairly well. To-day the temperature, hitherto moderate, has run up to 105.4° , and there are signs of pneumonia at the left base.

14th.—Tube removed. Breathing almost at once became embarrassed, and tube had to be replaced within ten minutes.

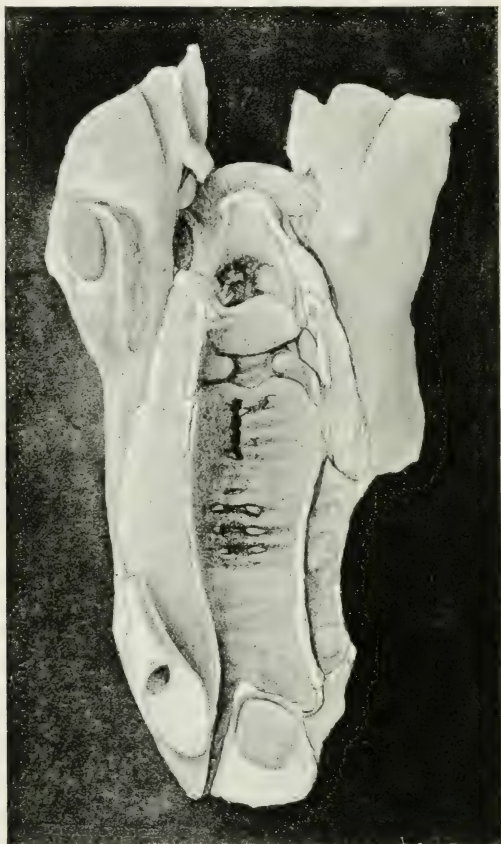
15th.—Child has developed a rash, and has been transferred to a scarlet fever ward.

18th.—Food taken badly. Nutrient enemata ordered. During the night patient coughed the tube out; dyspnœa almost immediately ensued, and tube was replaced.

20th.—Breathing very rapid, but no laryngeal obstruction. It was decided to remove the tube by the extractor, the string having given way. The tube was at first distinctly detected, both by the left forefinger and by contact with the instrument, but at the first attempt at extraction it disappeared. Though for a moment I thought it must have dropped down the trachea, I at once dismissed the idea as too improbable, and jumped to the conclusion that it must have been dislodged, and then have passed into the pharynx. The child was put back to bed, when at once respiration became impeded, stopping altogether as it was carried to the table for tracheotomy. The trachea was opened without delay, but all attempts to restore animation failed.

The following was the condition disclosed by the autopsy performed on the following day:

No sign of membrane about either fauces, trachea, or bronchi. There is deep ulceration of the pharynx both behind and



Larynx and Trachea in Case 6.

below the left tonsil. The left aryteno-epiglottic fold is completely destroyed by ulceration, which extends downwards into the larynx. On the outer side the excavation at the side of

the epiglottis is separated from the ulcer below the tonsil by a ridge of comparatively healthy tissue. The whole of the inner surface of the larynx above the true cords is deeply ulcerated, and in fact necrotic. Both false cords are destroyed, as is also the left true cord; remains of the right true cord are still visible. Below the cords the mucous membrane is deeply ulcerated, and the cartilage is partly denuded. The thyroid cartilage is in part necrosed, and the anterior half of the cricoid is quite disintegrated. There is intense injection of the trachea in its upper half, and the mucous membrane over a good portion of it is either deeply ulcerated or has altogether disappeared. The upper two tracheal rings are bare and necrotic in front, the next two are still covered, while the succeeding four or five are completely exposed and dead in their anterior part, having broken up as the trachea was opened for examination. Opposite the tip of the tube the destruction has extended even deeper than the cartilages. The tube itself was found lying across the end of the trachea, extending down the right bronchus.

The destruction of the left aryteno-epiglottic fold seems to me another example of a string-ulcer; there was, it is true, some ulceration about the fauces in its immediate neighbourhood, but I am confident no one could examine the specimen without coming to the conclusion that this particular lesion was of artificial production. On placing the tube *in situ* it was found that very slight pressure was sufficient to push it through the disorganised larynx. At this time I was perfectly familiar with the use of the instruments, and can safely say that no undue force was used when the accident happened. The occurrence is not only interesting as being, I believe, unique, but important in its bearing on the practice of continuous intubation.

CASE 7. W. W—, æt. 5, admitted November 15th, 1890, under the care of my colleague Dr. C. E. Matthews, who has kindly furnished me with an abstract of the notes.

November 15th, 11 p.m.—Thick membrane visible on fauces and tonsils, stridor, and recession of lower ribs with inspiration. Intubated at 12.30 a.m. (November 16th); the tube was coughed up an hour later, and was not replaced till 8 a.m.

17th.—Tube removed at 4.30 p.m.; replaced in five hours on account of dyspnœa.

18th.—Tube removed at 1.40 p.m.; replaced in two and a half hours.

19th.—Tube removed at 4 p.m.; replaced in one hour, child being much exhausted.

21st.—Tube taken out, having been worn continuously since the last note, a period of forty hours.

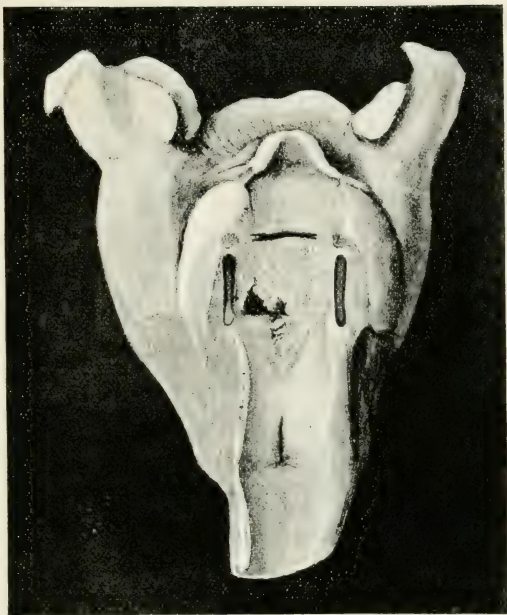
December 6th.—For the last fifteen days (since November 21st) the tube has not been used. Still the condition of the patient has not been entirely satisfactory. The voice has throughout been husky, and the breathing stridulous, especially on exertion or under excitement; but there has been no definite sign of danger till to-day. During this evening the stridor increased, and urgent dyspnœa rapidly ensuing, intubation was again performed.

8th, 7.40 p.m.—The tube, which had been *in situ*, save for a few minutes' interval, since the last note, was again coughed up. The symptoms rapidly became urgent, and tracheotomy was performed.

9th.—Patient died rather suddenly without any further embarrassment of breathing.

The post-mortem examination performed on the following day showed the following conditions. No membrane on fauces or elsewhere. Larynx: Well-marked œdema of epiglottis, of the aryteno-epiglottic folds and of the false cords; at the base of the left aryteno-epiglottic fold was a superficial ulcer (evidently caused by the string). The interior of the larynx was lined with much tenacious secretion. The true cords had lost their smooth and white appearance, and were red, roughened, and injected, the ulceration being more marked on the left side. Below this more extensive changes appeared. Ulceration commenced again a little above the level of the cricoid, extended over the anterior half of that part of the larynx, and reached in front down to the fourth tracheal ring. On the left side the floor of the ulcer was formed by the disintegrated cricoid: elsewhere the cartilage was not exposed, but the first ring of the trachea was bare.

So ended this attempt at intermittent intubation; if it had been continuous the result could hardly have been worse. To



Larynx and Trachea in Case 7.

recapitulate: the tube was worn during the primary illness for five days, or for four if intermissions of varying length be counted. Then followed a period of fifteen days, during which, but for some stridor, the patient seemed comparatively well. This period of remission was terminated by the onset of œdema glottidis, which necessitated two days' more tubage; after this tracheotomy was performed, but only postponed the fatal issue for twenty-four hours, death occurring on the twenty-fourth day after admission.

But for what may almost be termed an accident, W. W— might now be figuring as a successful case, notwithstanding the scars in his larynx: in intubation it is only the dead that tell tales.

Now as to the reason for the occurrence of these ulcerative processes. I think every one who has read the preceding

account must be appalled, as I have been, by their frequency and extent. Are they accidental or essential? and if accidental how can they be avoided?

The two cases in which the most rapid and the most extensive destruction occurred were both complicated with scarlet fever. It is possible that the effect of the double poison was to bring the nutrition of the tissues to its very lowest point, and so precipitate their death; but making full allowance for this, much still remains unexplained. I have sought information as to the existence of similar observations elsewhere, but with very partial success. From America come lists of intubation cases in hundreds, and all is very much *couleur de rose*; but though little or nothing is said of ulceration directly, its not infrequent occurrence is acknowledged by recent modifications in the shape of the tube which are aimed at its prevention. Whether these alterations will effect their object time will show. At St. Thomas's Hospital, on the other hand, out of fourteen fatal cases there have been at least three showing more or less extensive ulceration.

Is the operator to be held responsible for evil results when they occur? For example, I have been told by some that my tubes must be too large, by others too small. But I have invariably used the size recommended by O'Dwyer himself; and so, if I err, I err in good company. Another explanation has been found in the tube not being pushed properly home, the result being (so my informants say) that the tube moves up and down the trachea, fretting its bed into holes. I know of no power that should make the instrument execute such movements, and the theory is disproved (apart from its intrinsic improbability) by the very definite localisation of the ulcers, if seen in an early stage, at the points of greatest pressure.

I will now in a few words compare the condition and progress of an intubation case with that of a tracheotomy; but my remarks here should be accepted as they are offered, with some reserve, as they express opinions rather than facts, and are based on too small a number of observations to be very conclusive. The difference does not appear to me to be very marked, though here too the advantage is with tracheotomy. On this point the nurse in charge as a rule gives forth no uncertain sound, and her evidence is worth something.

With most children there is considerable difficulty in taking food for some hours after the insertion of the tube. This may as a rule be surmounted by supplying nourishment in a pultaceous form, fluids being often rejected throughout. Late in the case I have seen this difficulty reappear, and have found it then more difficult to deal with. In one instance I believe it was due to the destruction of the left aryteno-epiglottic fold preventing the occlusion of the glottis. If so its cure has been already suggested—the abandonment of the string.

The introduction of the tube in most cases relieves dyspnœa satisfactorily, but in my experience there has not been that frequent expulsion of membrane which brings relief after tracheotomy. Indeed, unless accompanied by the expulsion of the tube it is hardly possible for it to occur. Now the expulsion of the tube is a comparatively infrequent occurrence, and so far as I have seen it is the exception for membrane to be coughed up with it; the relief given is therefore both partial and temporary.

I may fairly be asked when and in what class of cases I would advise intubation.

In the first place I would not hesitate to use it as initial treatment in any case in hospital. Supposing, then, the patient to live more than forty-eight hours, of course, not being moribund, I should proceed to tracheotomy, being helped in the operation by the presence of the tube. That would be my practice at present; but if, as is possible, the danger of destructive changes set up by the tube should with further experience appear to be less imminent than these results would suggest, then, with confidence proportioned to the facts from time to time acquired, the period allowed for tubage might be indefinitely lengthened. For what are known as malignant cases associated with dyspnœa intubation is undoubtedly the treatment; by its means euthanasia may be attained nearly as well as by tracheotomy, and without its drawbacks: if, after all, the child refuse to accept the fate allotted to it (and in diphtheria it is the unexpected that happens), then it may receive the fuller blessings of the major operation.

To conclude: my object in writing this paper is not to

attack intubation, but to point out its dangers to those who are commencing its practice. The advantages are so obvious that there seems little necessity for its advocacy: no one but a house surgeon would choose tracheotomy for the operation's sake; while intubation, on the other hand, presents so alluring an aspect of simplicity and safety to surgeon, patient, and relatives, that there is considerable danger of its displacing the older operation without sufficient cause being shown. I have written on the principle that failures are often more valuable than successes; and if through this record others may avoid the dangers with which I have met, my object is attained.

THE TREATMENT OF ERYSIPELAS BY HYPODERMIC INJECTION.

By LEONARD A. BIDWELL, F.R.C.S.

THE method of treating erysipelas by subcutaneous injection has, I believe, been very little practised in this country; in fact, I can find no notice of any cases having been put on record. I hope this will prove a sufficient apology for basing a paper on so few examples.

I regret that I can only refer to eight cases, and of one of these I have no records. I have delayed recording these few in the hope that I might have other opportunities of employing the treatment; but I am glad to say that the disease seldom arises in the wards of the Evelina Hospital for Sick Children, and the house surgeon is naturally unwilling to admit cases suffering from this disease, while those occurring among the out-patients are difficult to trace.

The method that I have employed is the hypodermic injection of a 1 in 20 solution of carbolic acid into the apparently healthy skin at a distance of three quarters of an inch or one inch from the spreading red margin; about three minims were injected at each point, and the punctures were made one inch apart; usually six or seven, but in one case as many as twelve punctures were required. Dry alembroth wool was then applied to the affected part, and it was not disturbed till the next day. Marked relief to the throbbing and pain in the part was usually experienced within a few hours.

The proceeding may be thought to be painful—in fact, it has been stated by M. Nussbaum that, although always efficient, it is positively cruel; and I was told by some of my friends that though I might treat children in this way, I should probably not get any adult to submit to it. Now in one adult on whom I have employed the treatment no particular pain was felt at the mere prick of the needle, but almost complete cessation of pain was experienced in the limb immediately afterwards. In two of the cases the children were in a drowsy condition, and did not resent the prick at all; in the others chloroform was administered, and no after pain was felt.

In none of my cases was the treatment employed until the disease had been watched for a day at least, and the margin had been seen to advance rapidly, the temperature also being high. When examined on the day after injection, in no case had the erysipelatous blush advanced to within half an inch of the points of puncture; but in one instance it had extended slightly round the back of the limb, while in another the rash had spread over the face in a different direction. The temperature always fell after the injection, and the general condition improved considerably. There were never any symptoms suggesting carbolic acid poisoning.

Treatment by hypodermic injection was recommended first for the cure of malignant pustule, the punctures being made in the same way about two inches from the slough. It was then applied to erysipelas by Hueter,¹ who published in 1879 a series of seventeen cases treated by injection of a 3 per cent. solution of carbolic acid: fourteen of the number recovered within two days. A similar method has been recommended by M. Ducrey,² who employs a 1 in 1000 solution of mercuric chloride, injecting it 2 millimetres from the edge at points 3 millimetres apart; this, however, he asserts, should be repeated in twelve hours' time. It is stated that large vesicles then form, and the disease is cured; the vesicles remain to be healed with ointments.

Now by carbolic acid treatment, such as I have employed, in only one case was any local suppuration excited by the in-

¹ 'Centralblatt. für Chirurgie,' No. 5, 1874.

² 'Viertelgab. für Dermatologie und Syphilis,' March 3rd, 1888.

jection, and in no case did large blebs form at the seat of inoculation.

A modification of the treatment was introduced by M. Kuhnast,¹ in which multiple scarifications were made at the spreading red edge, and a 1 in 20 solution of carbolic acid rubbed in.

I should add that of three cases last year in which this treatment was not employed, two proved fatal. One patient last year, an out-patient, was treated by injection and cured, but unfortunately I can find no record of the case.

The following abstracts show the results of the measure in seven examples.

CASE 1.—J. H. S—, a well-nourished child, æt. 11 months, was admitted into the Evelina Hospital on January 18th, 1889, under Dr. Tirard. There was an erysipelatous blush commencing about the junction of the lower and middle thirds of the left leg, where there was an ulcer the size of a half-crown. From this point the blush extended over the front of the knee-joint and terminating in a defined margin at the junction of the lower and middle thirds of the thigh. This had been noticed for one day.

Boracic fomentations were applied. Temp. 99·6°.

January 21st.—The child's general condition is worse; refuses food, &c. The rash has spread to the junction of upper and middle thirds of the thigh. Three minims of a 1 in 20 solution of carbolic acid were injected at eight points at a distance of three quarters of an inch above the spreading margin. This did not appear to be painful. Leg wrapped in cotton wool.

23rd.—Temperature normal. The blush has completely disappeared; the advancing line did not reach within half an inch of the hypodermic punctures. The seats of puncture show minute suppurating points. The injection is a decided success. General condition improved.

24th.—The points of injection are not suppurating.

27th.—No return of blush. There is an enlarged gland in groin.

28th.—Femoral abscess opened.

February 6th.—Discharged quite well.

¹ 'Centr. für Chirurgie,' Leipzig, 1886, No. 13.

CASE 2.—E. W—, æt. 7 months, was brought to Dr. Carpenter's out-patients on March 4th, 1889, suffering from eczema.

March 9th.—Swelling and redness noticed below the lobe of the left ear.

11th.—There is a bright red blush with well-defined and raised edges extending all round the left ear, reaching over the parietal bone for an inch, extending backwards about a quarter of an inch, downwards into the neck about one and a half inches, and forwards on to the cheek about three quarters of an inch. Temp. 102° . Hypodermic injections of carbolic acid were then made in a similar manner as in the last case at eleven points. Cotton wool applied. No internal remedies were given.

14th.—Rash did not spread but faded the day after the injection; now has completely disappeared, but there is an abscess just below the lobule of the ear at a point where no injection was made; this was opened.

21st.—Abscess healed.

CASE 3.—E. H—, æt. $2\frac{8}{12}$, was admitted on June 15th, 1889, under Mr. Makins, suffering from vulvitis and bubo.

June 26th.—Temperature rose to 102° . Face flushed, some discharge from the eyes.

28th.—Redness noticed this morning just below the right eye; it has gradually become brighter, and has extended to the other side. Vomiting. In the evening both eyelids were puffy and swollen. The skin below and on their outer sides was raised and red.

29th.—Temp. 103° . There is a well-marked patch of erysipelas on the forehead. Antipyrin was given and boracic fomentations were applied, then four grains of salol every four hours.

July 1st.—Redness spreading rapidly over forehead to vertex. Large bullæ on the forehead.

2nd.—Child seems very bad. Temp. 104° . Almost unconscious, delirious at times, and refuses food. The rash has spread to the middle of vertex and towards the ears. Scalp very œdematous. Hypodermic injections of carbolic were made at twelve points, one inch from the spreading margin along the vertex. A little chloroform was given, but was

almost unnecessary, owing to the unconscious state of the child. Boracic fomentations still continued.

3rd.—Rash fading, has not advanced at all. No vomiting. Temp. 100°.

5th.—Rash quite disappeared from head. Temperature has not arisen above 101° since injection. General condition of child much improved. There is some extension of redness over the left cheek, and carbolic acid was injected about half an inch from its margin at three points.

8th.—Temperature normal since last injection. No rash anywhere; still some puffiness of scalp. Child takes food well.

15th.—Abscess has formed on vertex at the site of the injection; this was aspirated, and a drachm of pus removed.

18th.—Abscess opened. Temperature still normal. After this the child had an attack of laryngitis, from which it recovered, and was discharged cured on July 29th.

CASE 4.—H. H—, æt. 2½, was admitted under Dr. Taylor on August 31st, 1889.

Ten days previously a suppurating bursal cyst had been excised from the inner side of the right knee; three days before admission the wound was dressed, but there was no redness. When admitted the child was very restless and drowsy. Temp. 100°, pulse 180. Around a small granulating wound on the inner side of the right knee was an erysipelatous blush with defined edge. This extended over nearly the whole of the front of the limb as far as the junction of the middle and lower thirds of the thigh. A 5 per cent. solution of phenol in alcohol was painted on. Tincture of perchloride of iron given by the mouth.

September 1st.—Foot œdematous. The erysipelas commences as a ring above the ankle, and is general up to above the knee. Temp. 99°. Still fretful and drowsy.

2nd.—Leg much worse. Temp. 101°. The rash has extended to the junction of the upper and middle thirds of the thigh, and downwards on to the dorsum of the foot; several bullæ have formed. Colour brighter. Carbolic acid injected hypodermically at ten points one inch from the spreading margin along the front only of the thigh. Chloroform was given. Cotton wool applied.

3rd.—Temp. 100°. Rash has not advanced towards the injection, and is fainter all over. Boracic fomentations were applied.

4th.—Temperature normal. Rash much faded.

5th.—Still a flush on the back of the thigh where no carbolic injection had been made, none on the front. Phenol in alcohol applied.

7th.—Temperature still normal. Rash gone. Wound healthy. The child then rapidly convalesced in spite of an attack of acute tonsillitis.

CASE 5.—J. R—, æt. 3 years, was brought to Mr. Eve's out-patients on April 26th, 1890; she had suffered from eczema about the nose for three weeks. There was a bright red rash with raised and defined edge extending over the right side of her nose and the right cheek from the eyelid nearly to the chin, and within about an inch of the lobule of the ear. This was first noticed the day previously, and had extended very much since. Temp. 99°, pulse 128. The part was washed with a 1 in 500 perchloride solution, and carbolic acid was injected three quarters of an inch from the raised margin at ten points. No chloroform was given, and the child did not resent it much.

April 28th.—Rash, which has not extended at all, is fading. Temperature normal.

29th.—Rash quite gone.

CASE 6.—H. R—, æt. 10 months, had been an in-patient in the Evelina Hospital for erysipelas of back from April 16th to April 21st, 1890. A small puncture had been made, and the rash had faded.

He was brought up to the out-patients on April 29th with a rash upon his back extending from the wound.

April 30th.—Rash had spread about three inches above and below. Temp. 102°. Child seemed very ill. Carbolic acid was injected at five points, one inch from the upper margin at points about one inch apart. Wool dressing applied.

May 1st.—Rash has not spread at the upper margin and is fading, but has spread about one inch downwards and on left

side, so carbolic acid was injected at six points one inch from the outer and lower margins.

3rd.—Rash quite gone.

8th.—A subcutaneous abscess has formed in the centre of the back some distance from the points of injection. Two incisions made, and salembroth dressing applied.

12th.—Wound healing.

15th.—Wound healed.

CASE 7.—R—, æt. 35, a maid at the Evelina Hospital, on July 19th, 1890, fell down and cut her elbow.

July 21st.—There was bursitis of left olecranon bursa. Boracic fomentations were applied.

23rd.—There was an erysipelatous blush about two inches wide round the wound with defined margins. Slight uneasiness in the axilla. Feels sick. Temp. 99°.

24th.—The redness has extended about six inches down the forearm and about one inch up the arm. Has vomited. Temp. 102°. Herpes about mouth; tongue coated. Arm very painful. An enlarged gland in the axilla. Three punctures were made with a hypodermic needle an inch from the lower spreading red margins, and a fourth an inch above the upper margin. Five minims of a 1 in 20 solution of carbolic acid were injected at each point. The limb was wrapped in wool soaked in a 1 in 1000 solution of mercuric chloride. The patient immediately after injection experienced great relief from the pain in the arm.

25th.—Rash much faded, has not extended at all. Temperature normal. Feels better.

26th.—Redness quite gone, still a little œdema of the back of forearm. Wound looks healthy. No herpes about mouth.

From this time there was no return of redness. The temperature remained normal, and the patient felt quite well. She got up, July 29th, and was sent to the country on August 2nd. Wound quite superficial, and healing under boracic lint.

It is now, I think, admitted that the disease is due to the presence of streptococci in the lymph-spaces of the skin. The streptococci were first isolated by Fehleisen,¹ who also

¹ 'Keating's Encycl. of Diseases of Children,' vol. i, p. 774.

succeeded in producing the disease by inoculating pure cultures of the organism.

A good account of bacteriological investigations of thirty-one cases, three of which proved fatal, is reported by M. Meërovitch.¹ He examined the skin, serum from bullæ, and blood in every instance, and the internal organs in each of the fatal cases.

The affected skin invariably contained great numbers of characteristic streptococci, which filled the lymph-spaces of the corium and the intervals between the cells of the epidermis, but were not found in the cells themselves.

They are always present, and this is most important, in the surrounding apparently sound skin to the distance of at least half an inch from the red margin. Various other organisms are found on the surface. In very grave cases a few streptococci are found in the blood; they are also found in all secondary abscesses, and in the liver, spleen, and kidneys in fatal cases.

In some inoculation experiments which were made from pure cultures of the streptococci upon rabbits, erysipelas was developed in forty-four out of sixty-two rabbits which had been inoculated, and the severity of the attack was proportionate to the number of microbes introduced.

In some sections of erysipelatous skin which I have examined, I have been able to find streptococci in the deep layers of the corium, and that too in sections of the skin beyond the spreading red margin.

Now it has been shown by Tillman and Fehleisen that cultures of streptococci which have been mixed with a 2 to 4 per cent. solution of carbolic acid for five minutes will not produce the disease when inoculated. A 1 in 2000 solution of mercuric chloride is equally preventive.

Considering, then, that the disease is due to the presence of streptococci, the treatment is at least rational, for we may assume that the hypodermic injections, being made half to one inch from the spreading margin, will destroy the cocci where they are most active; and that it does destroy them is shown by the fact that in no case did the rash extend to within half an inch of the point of injection.

¹ 'St. Petersburg Inaugural Dissert.,' 1887, p. 130.

In considering any treatment of erysipelas it is most necessary to fully appreciate the natural tendency of the disease towards cure; but on the other hand the rash often continues to spread for several days after the expectant treatment, such as the application of fomentations, &c., has been employed.

The disease has been stated to last for a various number of days—from four to nine days according to some, and from ten to twenty-one days according to others; probably about from ten to fourteen days is usual.¹ Now in Hueter's seventeen cases, eight were cured in one day, six within two days, and two within three and four days respectively after the first injection. Out of my seven cases, the rash lasted one day in one case, two days in two cases, three days in two cases, and five and six days in the remaining two cases; but in these latter the rash had entirely disappeared from the neighbourhood of the injection within two or three days, and remained only at a point where no injection had been used. In two of the cases a second injection was made, in another carbolic acid in phenol was applied. From these facts it will be seen that the duration of the disease is certainly shortened.

In Dr. Hueter's paper it is mentioned that two or three applications are often needed, but I have never found it necessary to repeat the injection more than once, and that only in two instances.

As regards the occurrence of abscess after the injections, it certainly at first sight appears to be frequent. Thus supuration occurred on four occasions, but in only one of these cases can the injection be held responsible for the complications, in the other three the abscess appeared at a point far removed from the punctures.

Of the seven cases, four were traumatic in origin, and three followed eczema of the face. I do not think that there was any difference in the effect of the remedy in the two groups.

That the constitutional symptoms are relieved soon after the injection is seen by reference to Case 3, where the child having been in a very grave condition—in fact, the injection had been used only as a last resource—within a few hours

¹ Dr. Hirschfelder, 'Keating's Encycl. of Diseases of Children,' vol. i, p. 778.

began to improve, and the temperature fell. This fall of temperature was noticed in all the cases.

From my experience in these few cases I should feel inclined to recommend hypodermic injection of carbolic acid, in the way described, in certain cases of erysipelas only. I think that in an attack of rapidly spreading erysipelas with severe constitutional disturbance the hypodermic injection would probably considerably curtail the duration of the disease; but in mild cases there is no occasion to employ so severe a remedy.

In conclusion I wish to thank the members of the staff of the Evelina Hospital for Children for their kind permission to make use of these cases.

REMARKS ON THE RADICAL CURE OF HERNIA.

By SIR WILLIAM MAC CORMAC, M.A., M.Ch., F.R.C.S.

DURING the last quarter of a century the manner of dealing with cases of strangulated hernia has become materially modified.

The present practice of early operation conjoined with effective antiseptic precautions has enormously increased the number of recoveries, and this comparative safety has mainly led to the general introduction of an attempt to procure a radical cure of the hernia as a sequel to the procedure for relieving the stricture. This is, I think, for the most part done, and certainly ought to be done as a part of every herniotomy performed at a sufficiently early period, before the nipped bowel has been seriously damaged, and before the effects of the distressing vomiting, the pain and nervous depression forbid all but the most necessary steps for the immediate relief of the strangulation.

The adoption of a radical measure as a part of an ordinary herniotomy doubtless somewhat lengthens the operation, but on the whole it does not materially enhance the risks, and it is only contra-indicated in those instances where the changes in the incarcerated bowel compromise its vitality, or the age or enfeebled condition of the patient forbids the prolongation of the operation.

It is not, however, so much of cases of strangulated hernia I would speak as of those cases in which there is no question of strangulation, and in which an operation is to be considered in reference to the relief of an infirmity, the removal of a disability for many of the active occupations of life, a bar to the admission to the public service, and to a condition which at any time may occasion risk to life.

Of these we have several different classes of cases. We have, for instance, acquired forms of rupture coexisting with an anatomical predisposition to hernia, and such a tendency is a thing we cannot cure; we have forms of inguinal hernia occurring during intra-uterine or infant life, at adolescence, or in young adults; and we have femoral and umbilical hernias, which occur for the most part in women.

The congenital forms of inguinal hernia being dependent upon an accidental defect, the non-closure of the vaginal process of peritoneum, makes them, I think, more amenable to definitive cure than are the acquired forms of hernia, and crural hernia seems to be more frequently curable than many forms of inguinal.

The means adopted to obtain the radical cure have completely changed during the last ten or fifteen years.

The older methods were essentially subcutaneous, and usually consisted of invaginating a plug of scrotum into the inguinal canal, or drawing together the pillars of the ring by buried sutures. Now, the method of operation by open wound with closure of the inguinal canal by accurate suture of its walls and apertures is commonly adopted.

The first consideration is of course whether in cases without urgency, without symptoms, and with a hernia which can be retained by a properly made truss, a radical operation is justifiable. It certainly would not be so were the operation a dangerous one, even in the case of a young man desirous of entering the public service, but, if properly performed, I do not think it is attended by any considerable risk. Of sixty-four cases of all kinds performed by my colleagues and myself there were four deaths: one in the case of a child of two and a half, from collapse, after vomiting and diarrhoea; one in a woman of thirty-nine, in which instance no post-mortem took place; one in a scrotal hernia in a man of fifty-

one, from peritonitis ; and one in a scrotal hernia in a man of forty-nine, from venous hæmorrhage into the scrotal tissues and subsequent cellulitis.

My own hospital cases and the cases I have had in private practice fortunately all recovered. Two, I remember, were very unfavorable for any form of operation, being large partially irreducible herniæ in men over forty, incapable of being controlled by any form of truss. Both men were exceedingly obese, and both lived in the tropics. In each of these cases the omentum was very intimately adherent to the sac and much altered, and a very large quantity was removed. Yet both made excellent recoveries, and have returned, one to the Malay peninsula and the other to Hongkong, where they respectively reside, to all appearance quite cured.

Wolters has collected from Schede's Clinic in Hamburg 165 cases, in which there was an adequate history, of operation for the radical cure performed for cases both of strangulated and non-strangulated hernia.

The operation was performed in different ways. In 95 a ligature was placed as high as possible on the neck of the sac, and the sac extirpated (in congenital cases only partially), and the hernial apertures sutured. In 17 cases of femoral hernia the sac only was extirpated, and its neck tied without subsequently introducing sutures. In 15 cases suture of the femoral ring only is mentioned. In some cases there were slight modifications of procedure, and in 24 the plan of operation is not mentioned. In 53 instances portions of omentum were ligatured and removed.

Union by first intention without reaction is of course the ideal result, but this can scarcely occur when the tumour has been previously subjected to severe taxis or is inflamed. The average period required for complete cicatrization in strangulated cases is, according to general experience, about twenty days, and in non-strangulated cases it is about the same. But the omission of drainage-tubes and the more complete coaptation of the wound surfaces shorten this period by about a week.

In 51 cases of strangulated inguinal hernia the total mortality was 7 ; but only 4 of these, or 7—8 per cent., were in

any way traceable to the operation itself; 1 was from shock in an enormous scrotal hernia, 3 were from peritonitis, and the others were complicated cases in old people. Of 64 cases of strangulated femoral hernia in which a radical operation was performed, 4 died, 2 being feeble old women; one death was from pneumonia, the other from hæmorrhage dependent on a cancer of the stomach.

Of more interest is it to analyse the results of operation on reducible hernial tumours. There were 40 operations on 37 patients affected with reducible inguinal hernia (in 3 instances a double operation was performed). Two cases proved fatal, one that of a man of fifty-two, who died from fatty degeneration of the heart after the wound had healed; the other, a patient with fatty degeneration of the liver, succumbed to diffuse peritonitis, which, it is believed, had commenced previous to the operation, the symptoms being mistaken for those of incarceration of the bowel.

Ten operations on cases of femoral hernia all proved successful.

In the 50 operations, then, there were but 2 deaths; and, one of these not being assignable to the operation, the mortality is only 2 per cent.

Tilanus records in 1879 79 cases, mortality 11 per cent.

Segond and Leisrink record 273 cases, mortality 5·1 per cent.

Socin records 136 cases, mortality 3·6 per cent.

In the Sabbatsberg Hospital, Sweden, 200 cases were quoted, with no deaths.

Bishop quotes 199 cases of operations performed by five operators without a death.

Mr. MacBurney, of New York, records 40 cases performed by himself with but one death, and in only one did the hernia relapse, and other similar experiences might be cited; so that the operation may be considered as safe as any in surgery.

Professor Bassini, of Padua, in an article on the treatment of inguinal hernia published during the present year in 'Langenbeck's Archiv,' records 216 cases of operation upon cases of reducible inguinal hernia. All recovered but one, in which death resulted from a pneumonia which commenced after the complete healing of the wound. The mortality he

therefore considers *nil*. In 11 cases there was some constitutional disturbance, in the rest none. In 167 cases, or considerably more than two thirds, the wound had healed in a fortnight.

He was able to obtain the final result in 251 cases operated upon by himself or his colleagues, and found in 108 no return after a period varying from one to four and a half years. In 131 no reappearance had taken place up to periods varying from a month or two to one year. In 7 there was relapse, and in 4 the result was not ascertained.

In respect of the final result we must first determine at what period after the operation a cure may be considered definitive. Probably after the lapse of one year a final judgment may be pronounced, and, if no trace of reappearance has then taken place, the patient will in all probability have no return of his rupture.

The conclusions to be drawn from published tables vary much. In three fourths of 105 cases examined by Anderegg a relapse has occurred within the first year. In 58 cases observed by Wolters reappearance to a greater or less degree was found in 15, or 9 per cent. Anderson found a percentage of 50 relapses. Leisrink records 20 per cent. relapses in cases of non-strangulated hernia; and Svenssen, of Stockholm, 21 per cent. in 58 cases.

But even when recurrence does take place the operation is by no means without result. The recurrent rupture is usually small, easily controlled by a truss, and very rarely gives rise to any severe symptoms. I cannot myself give any exact opinion as to the percentage of relapse, as it is most difficult to trace hospital cases in London, but I know of many instances of perfect recovery both in hospital and in private practice.

Requirements Needful for Successful Operation.

In the first place the method of operation is important. As already referred to, the older methods do not commend themselves, and we may date the real and effective improvement from the time of the introduction of antiseptic methods

of wound treatment, while to Czerny in 1879 may be attributed the credit of having initiated the modern operation of total removal of the sac and suture of the pillars. Cicatricial obliteration was the aim of most of the older plans, but the cicatrix subsequently became atrophic, and unable to resist a fresh development of the hernia. MacBurney, of New York, has revived a plan of laying open the inguinal canal, and letting the wound cicatrise from the bottom. His results are stated to be very successful, but the proceeding does not commend itself to me. Most modern methods aim at complete closure of the hernial canal. We tie the neck of the hernial tumour at the highest possible point, extirpate the sac in whole or in part, bring the resulting raw surfaces into close and accurate contact from one end of the hernial canal to the other. Some operators attach most importance to the first, others to the second of these steps of the operation.

Celsus long ago recommended that after the stricture was divided the hernial orifice should be cauterised with the actual cautery to accomplish its closure by granulation; he also speaks of ligature of the neck of the sac.

In the seventeenth century scarification was adopted with a similar intent. Only in the present century did the idea of suture of the hernial orifices fully present itself, and Gross in 1858 was the first to suture the columns of the inguinal ring with silver wire, and the result was successful.

Operators vary in opinion as to the best material for closing the hernial canal. In 1879 Czerny proposed carbonised silk, which he considered more lasting than catgut. Banks in Liverpool and Schéde in Hamburg recommended silver wire sutures, not very tightly drawn and allowed to remain, and these they considered especially useful in cases where the hernial aperture is very wide, as they afford better security against relapse.

In some cases the strain causes the sutures to cut through, and the closure of the part ceases; and Socin considers this yielding so frequent and considerable that he attaches but little weight to this part of the operation.

Anderegg, Championnière, and several others also think the suture of the hernial opening a matter of indifference, and consider the essential condition of cure is the removal of the

sac and its ligature high up. I am of opinion, however, that both measures are important, and should be employed in combination.

In large inguinal herniæ it will generally be found sufficient to proceed as follows: To make a transverse superficial incision across the wall of the opened sac close below the external ring, dissect the sac off the cord, separate it up to the internal ring, and apply the ligature at that level by drawing the sac down. On dividing it a quarter of an inch below the ligature the stump retracts, or may readily be pushed within the internal ring. In congenital hernia it is certainly best not to attempt any complete removal of the sac; the elements of the cord will be found spread out over its posterior wall with scarcely any intervening connective tissue, and their separation from the sac is both tedious and difficult, and exposes them to risk of injury. I have known the vas deferens to be accidentally divided. Bassini quotes four cases where it was torn through, and although the ends were sutured together its lumen is so minute that I scarcely think its continuity could be restored. It is best, therefore, in these cases not to attempt any complete removal of the sac, but to separate the upper part as above described, and in congenital cases to utilise the lower portion to form a tunica vaginalis, the margins being approximated with a few points of suture. A raw surface some inches in extent will intervene between the stump of the tied sac and the retracted margins below. This surface is maintained in contact by the sutures and the pressure of the dressing, and unites well and firmly. I employ silk as the most trustworthy material to tie the neck of the sac and for suture of the canal. It is important not to tie the sutures too tightly, lest they cut their way out or strangulate and cause necrosis of the included tissue, and thus give rise to abscess.

In cases of partially descended testicle, where the badly or non-developed organ is lying in the inguinal canal, there can be no objection to removing it, and this allows the canal to be more thoroughly closed. This I have done in a few instances, while in another case I was able to detrupe a more fully developed organ, and maintain it outside the external ring by the manner the sutures were introduced.

As a rule no drainage is necessary, as there should be no space in which secretions can accumulate. The healing of the wound is thus accelerated, and a drainage fistula does not occur. Great care should be taken not to inject fluids into the scrotal wound. The loose cellular tissue very readily becomes distended, and I have known extensive sloughing to follow.

MacEwen draws the separated sac up to the internal ring, and thus hopes it may prove a barrier to the descent of the hernia; and Bishop has recently devised an ingenious modification which appears to be an improvement. I have not tried either method, as I have found the simpler plan of ligature of the neck of the sac high up sufficiently successful. Besides this, MacEwen's operation must be limited to herniæ of moderate size; for very large ones, for those with thickened sac, and for the congenital form it is inapplicable. The splitting open of the inguinal canal for the better removal of the cervical portion of the sac, which Bassini, MacBurney, Leisrink, and Rigal advocate, is, I consider, essentially bad, and calculated to weaken rather than strengthen the resistance of the abdominal wall. I have in many recent cases introduced the suture through the layers of the abdominal wall on each side of the inguinal canal, after the manner of Lembert's stitches. The margins are thus inverted, and the resistance to the reappearance of the hernia materially increased.

An important practical question arises directly after an operation of this kind, viz. whether the patient should wear a truss. If the operation be quite successful—that is if no yielding or impulse is to be felt—a truss, if worn immediately after the operation, is unnecessary, and may be prejudicial. It had better not be employed unless there be some indication of a reappearance of the rupture. The pressure of the pad causes atrophic changes in the part, thus weakens the area to which it is applied, and favours recurrence. If one be worn as a matter of precaution, it should be as a mere support, not exercising any considerable pressure on the part. The best course is to wear a light truss of this description for a short time, or during any unusual exercise or effort. Relapse is less likely to occur in cases where the hernia is

omental and can be removed, rather than when it consists of abundant coils of intestine. The anatomical variety of the hernia has, as we have seen, a practical bearing on the question of relapse. Some herniæ are of local origin; others arise from a general hernial predisposition. The former are dependent on the non-closure of the vaginal process of peritoneum, may occur in early infancy, and very often about puberty, owing perhaps to widening of the canal by the periodical turgescence of the spermatic cord, or to the laborious occupation of the patient. This form is one in which an operation is especially indicated and is very likely to prove successful. The prognosis in cases of femoral hernia is also more favorable than in inguinal hernia, the chances of relapse in the latter being nearly twice as great. Where the hernial aperture is large the cases are especially prone to relapse, and small herniæ are much less likely to reappear after operation than large—a fact which may partly explain the lesser frequency of recurrence in cases of femoral hernia. In young persons and those beyond middle life relapse is less frequent than in those operated on between thirty and fifty, the period of greatest physical effort. Anderegg states, however, as the result of his inquiries, that severe bodily effort does not appear to influence the frequency of relapse. Indeed, careful gymnastic exercise would seem to strengthen the muscles of the abdominal wall and diminish the tendency to recurrence. Weakly subjects with ill-developed muscles, and those suffering from chronic bronchitis are unfavorable subjects for operative interference, and patients with double hernia are more liable to recurrence than those with a single rupture.

Indications and Contra-indications.

An operation for the radical cure is, I think, permissible in a large proportion of cases. It may be regarded as an accepted practice that in strangulated hernia, whenever the condition of the hernial contents warrants their return to the abdominal cavity, and the general state of the patient is otherwise satisfactory, the radical operation should be superadded to that of herniotomy.

With reference to reducible hernia the question is more open. In children during the first years of life a hernia is usually cured by a properly adjusted truss, and this method of treatment should always be carefully tried, the more especially because the operation in infants is attended by considerable risk, owing to the difficulty in maintaining the asepticity of the wound. As the child grows older the chances of closure of the peritoneal process by means of a truss diminish. Probably after the first six or seven years of life the prospect of cure by any save operative measures is so small that the attempt need scarcely be made.

A reducible hernia which can be kept up by a truss may indeed be treated expectantly, but I think if for any reason on the patient's side an operation is demanded it is quite justifiable to perform one.

The operation is most strongly indicated in cases of irreducible hernia with periodical symptoms of incarceration or impending strangulation, a condition so especially common in umbilical hernia. It is also desirable in the case of patients whose occupation is liable to provoke strangulation or renders the condition extremely inconvenient, or where social conditions render palliative measures objectionable. It is also indicated where the hernia, although reducible, cannot be so maintained by a truss, and in cases which are attended by distressing local symptoms.

I would conclude by saying that in a large proportion of cases of inguinal hernia, especially those of congenital origin, a radical cure is possible ; and that in femoral and umbilical herniæ of small or moderate size the prospects of cure are good. Even where an absolute cure is not accomplished a great gain is generally secured in the diminution of the size of the hernial aperture, by which the retention of the hernia within the abdominal cavity becomes more practicable.

Lastly, and most importantly, the operation when properly performed is scarcely dangerous to life.

CLINICAL INSTRUCTION AT FEVER HOSPITALS.

By EDWARD SEATON, M.D., F.R.C.P.

THE necessity of systematic instruction at fever hospitals has been much insisted on of late years. The corporation of the city of Glasgow, recognising its importance from the public health point of view, have, at the instance of Dr. Russell and Professor Gairdner, within the last three years instituted a system of instruction, free of cost, of which the medical students of the university fully avail themselves. During the last year upwards of 100 students have gone through a course of instruction at the fever hospital of that city. The Metropolitan Asylums Board, which in London fulfils the functions of a public health authority, so far as the provision of hospital accommodation is concerned, mainly at the instance of the Royal College of Physicians, obtained parliamentary powers in the Poor Law Amendment Act, 1889, whereby the fever hospitals of the Board may be now made available for that purpose. A code of rules and regulations has been drawn up by the advice of the Royal College of Physicians for students who desire to attend a course of instruction at one of the Board's hospitals or asylums. The rules are as follows :

METROPOLITAN ASYLUMS BOARD.

Rules and Regulations to be observed by Students admitted to Medical Instruction at the Fever Hospitals (Asylums) under the control of the Board.

(a) *General Regulations.*

(1) No student shall be admitted to study at the Asylum (Hospital) until he has produced at the offices of the said Board of Management evidence of his having obtained the sanction of the Medical School to which he belongs to his attendance at the Asylum (Hospital).

(2) No student shall be admitted to study at the Asylum (Hospital) until the completion of the third year of his medical education, nor until he has held the offices of clinical clerk and dresser.

(3) The fee for each course of study at the Asylum (Hospital) shall be payable in advance to the Clerk to the said Board of Management. The amount of the fee shall be three guineas for the first two months, and one guinea for each subsequent period of one month, or such other amount as may from time to time be fixed by the said Board of Management with our consent.

(4) On payment of the prescribed fee the student shall be furnished with a card showing to what Asylum (Hospital) he will be attached, and containing information with regard to the times at and during which he may attend at such Asylum (Hospital). A copy of the regulations made by the said Board of Management respecting disinfection, and in force for the time being, shall at the same time be given to the student.

(5) A register shall be kept at each Asylum (Hospital) in which shall be entered the name of each student admitted, the medical school to which he belongs, and the number of his attendances at the Asylum (Hospital).

(6) The minimum duration of the course of study shall be two months; and the student shall be permitted to attend at the Hospital three days at least in each week.

(7) A certificate, signed by the Medical Superintendent of the Asylum (Hospital) attended by the student, shall be

granted by the said Board of Management to the student when he shall have satisfactorily completed his course of study, provided that no such certificate shall be granted to any student who has attended for less than two days in each week during the whole period of two months.

(8) The student, whilst within the gates of the Asylum, shall in all respects be subject to the control of the Medical Superintendent of the Asylum (Hospital), and shall strictly observe the regulations made from time to time by the said Board of Management with regard to disinfection.

(9) In case of any breach of discipline on the part of a student, the Medical Superintendent may suspend him from attendance at the Asylum (Hospital), and shall immediately report such suspension to the Clerk to the said Board of Management, who shall report the same to the Dean of the Medical School to which the student belongs. The Board of Management may remove such suspension, or they may confirm the same, in which case the student shall cease to have any right of admission to the Asylum.

(10) Paragraphs 3 to 9 (both inclusive) of this order shall apply to any legally qualified medical man who may desire to attend at any of the said Asylums (Hospitals) for purposes of medical instruction as if he were a student; but, so far as regards any such medical man, paragraphs 5 and 9 shall be read as if there was no reference in them to the Medical School to which a student belongs.

(b) Rules as to Disinfection.

(1) Every student will be required to wear, as long as he is within the Hospital, a suit of brown holland overalls, consisting of coat, trousers, and cap, which will be provided by the Asylums Board.

(2) As far as the Hospital arrangements admit, three rooms shall be set apart for the students. The first, which the student reaches on entering the Hospital (Room A), shall be a cloak-room, in which he shall hang his outer clothing; the second room leading out of this (Room B) shall be a lavatory; the third (Room C), also in direct communication with the second, shall contain the Hospital suit, which the student shall put on, and then pass direct into the Hospital.

On leaving the Hospital, the student shall enter Room C and take off his Hospital suit. Then, passing into the lavatory, he shall wash and disinfect his hands and face; after which he shall go into Room A, resume his outer clothing, and at once quit the Hospital.

(3) Every student shall keep his hair cut short, and satisfy the Medical Superintendent that he is sufficiently protected against smallpox by vaccination or otherwise.

N.B.—The above rules and regulations shall apply, so far as may be practicable, to any qualified medical man who may be desirous of attending the course of study, and who shall obtain the consent of the Medical Superintendent of the Hospital at which he may elect to study.

NORFOLK HOUSE,
NORFOLK STREET, W.C. ;
November, 1890.

The above rules are printed on a card to be given to each student on entering on a course.

On application by a student at Norfolk House in due form, a receipt is given for the fee, and after signing the Declaration a card of admission to the Hospital he wishes to attend, in the following form :

M. A. B. RECEIPT for Students' Fees for Medical Instruction. Name Hospital... .. Course Amount £ : : £.....	C. METROPOLITAN ASYLUMS BOARD. RECEIPT for Students' Fees for Medical Instruction, under Section 4 of the Poor Law Act, 1889. RECEIVED on behalf of the Metropolitan Asylums Board, this.....day of.....189...from Mr.....a Student attached to the Medical School of..... the sum of.....pounds.....shillings, being the amount of the Fee (payable in advance) for a months' course of Medical Instruction at the.....Fever Hospital. Signed..... Receipt Stamp <i>Clerk to the Board.</i>
--	--

G.

METROPOLITAN ASYLUMS BOARD.

FORM OF DECLARATION to be signed by Clinical Student on or before admission
to a course of Medical Instruction at the.....
Fever Hospital of the Metropolitan Asylums Board.

I,.....a Student attached to the Medical
School of.....hereby agree and undertake, whilst
I am within the Hospital gates, to be under the control of the Medical Superin-
tendent of the Hospital, and to obey strictly the Rules of the Asylums Board
with regard to disinfection.

(Signed).....

Student.

Dated.....

METROPOLITAN ASYLUMS BOARD.

FORM OF ADMISSION to a.....months' course of Medical Instruction
at the Eastern Fever Hospital of the Metropolitan Asylums Board.

.....189...

To the MEDICAL SUPERINTENDENT OF THE.....FEVER
HOSPITAL,

I HEREBY CERTIFY (a) that Mr.....
a Student attached to the Medical School of.....
may be entered as a Student upon the Register of the.....
Hospital.

Mr.....will attend at the Hospital
on.....from.....to.....
from.....to.....
from.....to.....

(Signed).....

Clerk to the Board.

Chief Offices:

Norfolk House,

Norfolk Street, Strand, W.C.

Bridge, Fulham. Physician Superintendent, Mr. Bruce. (262 Beds.)

Dr. Collie, at the Eastern Hospital, already has a class, to which he gives instruction three times a week. Dr. McCombie, at the South-Eastern Hospital, also has a class, to which he gives instruction three times a week.

This instruction is particularly valuable for the purposes of diagnosis of cases of scarlet fever, enteric fever, measles and chicken-pox, &c., at the various stages of the diseases.

It is perhaps unnecessary to dwell on the importance of this kind of instruction, but it may be pointed out that, under the Notification of Infectious Diseases Act of 1889, new and increased responsibilities are placed on medical practitioners which makes the early and correct diagnosis of the diseases scheduled in the Act more than ever important.

It is hoped that in time, when the advantages of this system of instruction come to be appreciated, the other Hospitals of the Board, viz.—

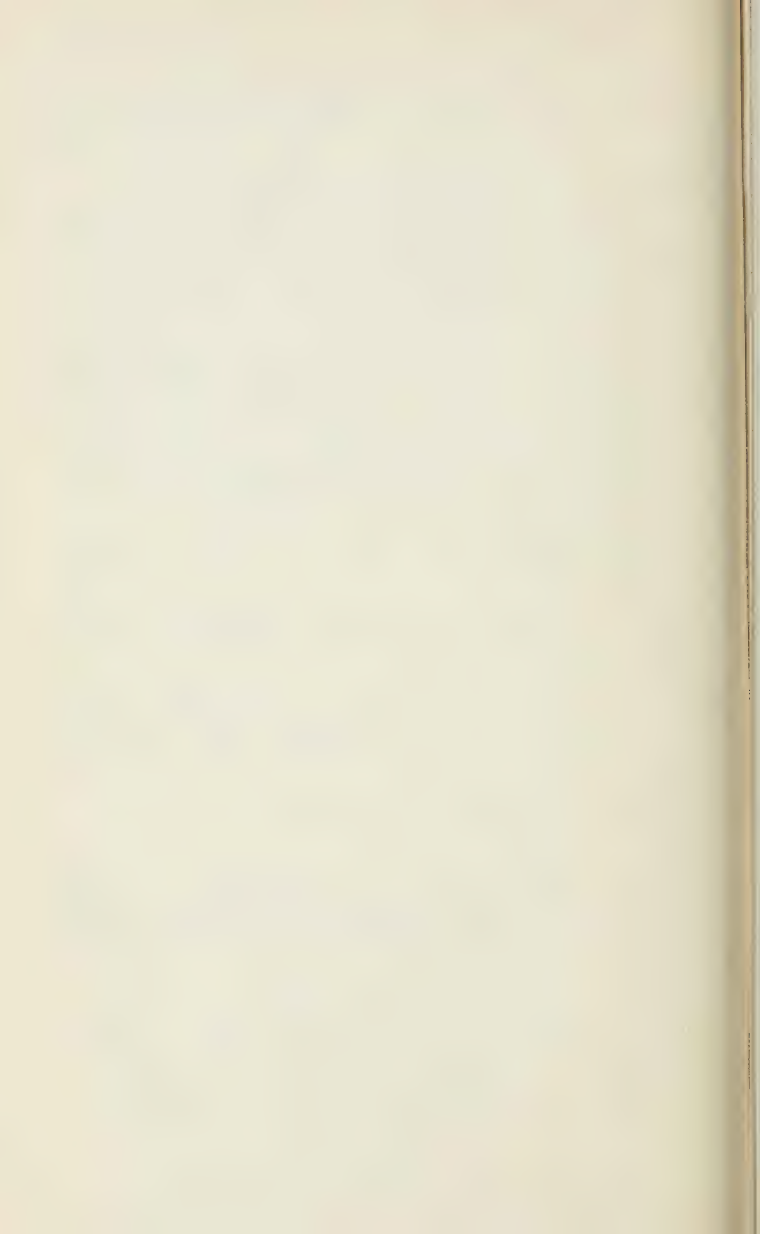
The North-Western Hospital, Haverstock Hill. Physician Superintendent, Dr. Gayton. (415 Beds.)

And—

The South-Western Hospital, near the Clapham Station, Stockwell, which is specially convenient to St. Thomas's Hospital, but to which at present only a limited class of cases are admitted. Physician Superintendent, Dr. Caiger. (402 Beds.)

—will be also available for instruction.

The certificates given by the Board will no doubt be of great value to those who are likely to offer themselves as candidates for posts of Medical Officers of Health, Medical Officers to schools or public institutions, Medical Officers to Fever Hospitals, &c.



RECENT CASES OF MYXŒDEMA.

By W. M. ORD, M.D., F.R.C.P.

DURING the last two or three years several cases of myxœdema have come under my observation in St. Thomas's Hospital. Seeing that our knowledge of myxœdema leaves much to be desired, it appears to me that the record of these cases may fairly find its place in the hospital 'Reports.' I propose to state in as short a space as possible the history and symptoms of illustrative cases, and to compare them with cases observed by me elsewhere.

CASE 1. *Myxœdema in a man ; cerebral hæmorrhage ; gout.*—M. W—, æt. 64, a man employed in gas-work, was admitted to George Ward on November 14th, 1888. There was nothing in his family or previous history that was worthy of record, save that five years ago he had been run over by a cab, and received injuries of his ribs, for which he was treated in Westminster Hospital. He stated that having previously been free from serious illness, except for the accident, he began four years ago to feel weak in his legs. This weakness gradually increased, and in October, 1888, he became an out-patient at St. Thomas's, having done no work during the preceding year owing to the loss of power. He had had at times giddiness, and had felt numbness and coldness about the feet. He had had occasional epistaxis, but no headache. His appearance on admission was characteristic of myxœdema,

particularly as observed in persons beyond middle age. His face was puffy (the notes describe it as "bloated"), the eyelids were thickened, the alæ nasi were tumid and broadened, the mouth wide, with thick lips. There was a slight permanent flush on the cheek, and also on the forehead. The skin about the eyes and on the forehead was much wrinkled, suggesting that there had been greater tumefaction than existed when he was first seen. The expression was calm and placid. The skin of the face was very dry and harsh to the touch. The tint of the skin of the face was dusky, and the texture was opaque, in contrast to the translucency generally observed in the younger subjects of myxœdema. These conditions were, indeed, presented over the whole of the body. The hands were covered with loose shining scales, and the dorsum of the feet was literally frosted with them. The hair was coarse and ragged; it had fallen off in considerable quantities during the preceding two or three years. The tongue was protruded readily, and was not much enlarged. The speech was thick and deliberate. The voice had lost its proper tone, and was leathery. It is necessary, however, to state that according to the patient's account his utterance had always been imperfect and difficult. Some of the more notable appearances of myxœdema were wanting. The hands and fingers had not the typical spade shape, although they were thickened and large. If, however, comparatively little changed in appearance the hands were used very clumsily in any action requiring delicacy of manipulation. He had great difficulty in undoing a button, and he grasped objects awkwardly, the thumb in particular failing to contribute the proper share of movement. He stated that his memory was impaired, and his powers of perception were very slow. Beyond this he seemed to be in possession of all his mental faculties. The so-called weakness of the legs did not consist apparently in actual loss of muscular power; rather in awkwardness, and in the want of co-ordination between flexors and extensors frequently occurring in myxœdema. It was noted that he snored a good deal when awake, much more when asleep. The viscera appeared to be healthy. The urine was light-coloured, clear, neutral, of sp. gr. 1014, and

contained no albumen or sugar. The thyroid gland could not be felt. The knee-jerks were brisk; cloni could not be obtained; plantar reflexes were normal. The right pupil was a little smaller than the left, both acting well to light and in accommodation. The temperature was 97.2° . He remained in much the same state for nearly three weeks, the temperature being always subnormal, the urine always clear, abundant, and of low specific gravity. No albumen was at any time detected. On the morning of December 4th the patient, who was seated by the fire, suddenly vomited. After several acts of vomiting he became unconscious, and passed his evacuations into the bed, to which he had been removed. The pupils were contracted, and did not react to light. Subsequently an extreme divergence of the eyes occurred. The limbs were at first very rigid, both fists were firmly clenched, the left arm executing curious rubbing movements against the front of the chest. The patient died, without return of consciousness, early the next day, December 5th.

Notes of the post-mortem examination by Dr. Sharkey.—Weights of organs—right lung, 1 lb. $6\frac{3}{4}$ oz.; left lung, 1 lb. $6\frac{3}{4}$ oz. Liver, 3 lbs. $10\frac{1}{2}$ oz. Heart, $15\frac{3}{4}$ oz. Kidneys, $9\frac{1}{2}$ oz. Spleen, $3\frac{3}{4}$ oz.

Body of a pale man, with thickish lips and rather puffy face, scarcely noticeable œdema under eyelids. Face suggestive of myxœdema, no œdema of legs or elsewhere. Nothing remarkable about the skin, not particularly dry. Fat throughout the body plentiful and of healthy semi-transparent yellowish colour. Blood abundant and rich in colour.

Hands not characteristic of myxœdema.

The tongue was large but normal; the tonsils small.

The pharynx, soft palate, and uvula were very remarkable in appearance; they were in no way inflamed, but they were swollen, and the swelling looked like œdema, but on incision fluid did not exude. This kind of solid œdema was most marked in the posterior pillar of the fauces on right side and on right side of pharynx, but it extended though in less marked degree to the left side. The epiglottis was remarkably large both in length and in breadth; it was healthy, as was the larynx.

The thyroid gland was very small, but not reduced to the

insignificant proportions often seen in myxœdema; it was pale in colour and firm on section, and presented none of the appearances of healthy thyroid; the section was uniformly pale, and was broken up into little islands by fibrous tissue.

Heart was large, especially the left ventricle, but both muscle and valves appeared healthy.

Lungs somewhat emphysematous, otherwise healthy. Some few adhesions here and there on both sides.

Liver healthy. *Spleen* small but normal. *Supra-renals* normal, colour deep yellow and opaque.

Kidneys did not appear before section to be particularly small, but when cut it was clear that the cortex was pale and greatly reduced in size. The capsule was rather adherent, and left a finely granular surface on removal.

Very slight deposit of urates in both great toe-joints. Cervical sympathetic chain seemed to be healthy.

Brain.—*Dura mater* rather thick. Sinuses normal. Both hemispheres of brain covered over large extent, the right more extensively, with a thin layer of blood effused in pia arachnoid. Under surface of brain and whole surface of cerebellum similarly covered. A very large hæmorrhage had occurred between the nucleus caudatus and nucleus lenticularis on left, and ploughed up the centrum ovale and basal ganglia, except the optic thalamus, which it had pushed backwards and towards the ventricles, and almost enucleated. It had burst into the ventricles, which were filled with blood. The fourth ventricle also was filled by a clot. The blood had passed down the cord, too, in the pia arachnoid, but only a very thin layer. The vessels at the base were very atheromatous.

The pituitary body presented nothing remarkable.

Cord healthy.

Observations.—The most important point in this case is the occurrence of fatal cerebral hæmorrhage, which it will be remembered was preceded by occasional epistaxis. It is quite true that epistaxis and cerebral hæmorrhage are far from uncommon occurrences in persons suffering from gout and contracting kidney, but it is also true that neither was the deposit of urates large nor the affection of the kidneys advanced, and it is not impossible that the tendency to hæmorrhages already known to exist in myxœdema may have

helped to determine the fatal accident. This tendency has been duly recorded in the report on myxædema by a committee of the Clinical Society of London. In the first case of myxædema which I ever observed—as far back as the year 1865—pregnancy occurred more than once after the full establishment of the general symptoms. The catamenial flow having usually been rather excessive, I found reason to fear that there would be severe hæmorrhage at the time of parturition, and I was accordingly prepared with all the resources then available for the arrest of loss of blood. Nevertheless dangerous hæmorrhage, following the expulsion of the placenta, nearly proved fatal on two occasions. I have had recently under observation, outside hospital, several cases in which bleedings are or have been of frequent occurrence, some from the nose, some from the uterus, most of all from the gums. The extraction of a tooth, frequently called for as a result of the disease, is in these cases followed by a bleeding lasting for several days in spite of treatment, and often reaching a considerable total. In fact, two of such patients have subsequently preferred to suffer from toothache rather than to incur the certainty of the hæmorrhage and the distress attending long-continued styptic applications. The remarkable swelling observed in the pharynx, soft palate, and uvula, as noted in the report of the autopsy, is certainly a matter of interest. It is, I believe, almost as characteristic of myxædema as the tumefaction of the face. The morbid changes in the kidney appear to me to be more characteristic of gout than of myxædema. It may be remembered that in the first case in which a post-mortem was made (Hannah Johnson) the kidneys were decidedly large, and yet presented microscopical appearances in part resembling those of chronic interstitial nephritis. A preparation including one of these kidneys is to be found in the museum of St. Thomas's Hospital.

So far as I know the association of gout with myxædema has not hitherto been recorded. The co-existence is probably accidental.

CASE 2. *Myxædema in a young woman ; early occurrence of delirium*.—M. L—, æt. 33, married. Admitted to Charity Ward, March 21st, 1889. The family history presents nothing of importance. As regards previous history, the

patient had scarlet fever some years ago; she states also that she lost a great deal of blood after her last confinement, and had "puerperal fever."

The patient dates her present illness from her last confinement, fourteen months previous to admission, although she admits to being unwell before, and to having laughed with a friend over her loss of memory. Some time before her confinement she noticed that she was weak in her legs, and about three weeks before admission she had pains in her knees, "which are not always present;" no epistaxis nor hæmatemesis. About six years ago she lost a baby, and says she has never been the same since. She feels much better and more lively on warm, bright days, and "much prefers the summer to winter." At the time of her admission her face presented the appearances of an early myxœdema. It was generally puffed, there was much œdema of the eyelids, but the features had not lost their general form, there being no broadening of the *alæ nasi*, or changes in the mouth. The skin of the face, although dry, was smooth and very translucent, anæmic, and free from sallowness. The usual flush was present over the malar bones. The skin of the body generally was dry and harsh, but there was a little perspiration in the palms of the hands. On examining the fauces the right tonsil was found to be very large and swollen, the left normal. The uvula and the edge of the soft palate were swollen and translucent. With the laryngoscope the epiglottis was seen to be pale and swollen. The mucous membrane in the upper part of the glottis was also thickened and pale, but the cords were unaltered. I may note briefly that the hair and teeth presented the appearances commonly found in the disease. Her speech was singularly slow and deliberate, and the usual change in the tone of the voice was markedly present. Her gait was slow, but varying. She had had no falls. The knee-jerks were very brisk; there was no ankle or patellar clonus; the plantar and abdominal reflexes could not be obtained. There was no visceral disease. The urine was acid, of sp. gr. 1011, and yielded a distinct trace of albumen, no sugar; examined subsequently it contained on several occasions a slight trace of albumen. The urea was estimated

on March 28th, when the quantity proved to be 10·64 grammes in thirty-five ounces passed in the previous twenty-four hours. The thyroid body was very small and could hardly be felt. The eyes, which were examined with the ophthalmoscope, appeared to be normal in all respects. The temperature at the time of admission was 98°. It never exceeded this upward limit, but was almost always below it, the lowest record being 95°. I have left the mental condition to the last. I quote the notes of my house physician, Mr. Forward, as follows :

“ Mental condition.—The one idea that pervades her whole mind is the fear of operation, and she continually asks to be reassured that none will be done ; her memory, she admits, is defective ; she takes longer than natural to remember things, and what has happened in her past life. When once she has started relating a fact, she will not be put off with other questions, but will conclude the matter she has in hand. Otherwise she appears to be a fairly intelligent woman.”

On March 30th it is noted that the patient “has been very troublesome all night, trying to get out of bed. She complains that Sister and Dr. Turney have conspired against her, that Sister has given her the battery, and she is no longer a Christian woman, as once she was led to suppose. She also complains that everyone in the ward is whispering about her, and seems to be almost maniacal.

“ April 1st.—Patient on Saturday afternoon about 2 p.m. was prevented by the nurse from throwing herself out of window. On Sunday morning she again attempted to destroy herself in the same way. She fancies that her food is poisoned. This morning she seems much quieter.”

After this paroxysm of mania she speedily returned to the condition noted at the time of admission, and on the 19th April was discharged. She has since been in the hospital more than once, and has, in the intervals, often come to the ward to see me. Her last appearance was on January 19th of this year, at the end of the long frost. She had now increased much in bulk, and the features were very much coarser. Her gait was unsteady, her articulation very difficult, and her anæmia and weakness much marked. Her

mental condition was improved. She appeared to have no delusions or suspicions, but was distinctly argumentative and prolix.

As to the teachings of this case, I would draw attention first to the description of the face. The anæmia, the translucency, and freedom from pigmentation of the skin belong, in my experience, to myxœdema of people under middle age, more particularly in the early stages. If it be certain that the disease was of only fourteen months' duration when she was first seen, the progress must have been very rapid. This again, in my experience, belongs to the cases of comparatively young women. In the older cases, as will be presently illustrated, the symptoms are developed much more gradually.

Delirium is recognised as a not unfrequent occurrence in advanced myxœdema, but I never remember to have heard either of such marked mental disorder as was present when she was admitted or of its occurring in so early a period. The maniacal outbreak was, I think, a great deal determined by her change of surroundings. Her suspicions and her fears alike were quickened into intensity, and so led to violence.

The variation in her mental symptoms is worth remark, and may be compared with variations to be related in the next case.

CASE 3.—I have before me the photograph of a woman, æt. 50, who was for some time under my care in Charity Ward in the year 1886. Her face had most of the usual characteristics of myxœdema, save that the skin was strongly pigmented, and the flush on the cheeks was feeble. So far as could be made out, her illness had not been of many years' duration, yet when admitted to the hospital it was well advanced. She was of great bulk, weighing more than eighteen stone, and lay at first in the marked hebetude of the later stages. Later on she became subject to a delirium, in which she talked incessantly, and imperatively demanded a listener. She found fault with herself primarily by reason of a number of small imaginary sins or shortcomings. She showed the greatest suspicion of all who were brought in contact with her, and made frequent unkindly criticism and

remark upon their conduct. She improved under treatment, and left the hospital. After an interval of six months she presented herself, much reduced in size, and not only clear in intellect, but with a keen memory of her rudeness, and every anxiety to atone for it. This appearance was in the summer. The following winter she died, unfortunately not under medical observation, but I was informed that there was no return of her great swelling or of her mental disorder.

The two cases just cited illustrate very well the kind of mental aberration peculiar to myxœdema. It consists mainly in attitudes of suspicion regarding not only family and surroundings, but also regarding the behaviour of the patient to people brought in contact with her. At one moment the patient believes that doctors, nurses, and friends are conspiring against her; at another she is filled with a sense of misbehaviour toward them, and not infrequently the two threads of delusion are interwoven. It will be observed that in both cases the aberration attained a great intensity, which might at first sight have been thought final. Ultimately, however, a return to at least comparative sanity followed in both cases, as far as I can see not due to treatment. These changes appear to me to partake of a quality of variation in intensity of symptoms traceable in the histories of all cases of myxœdema observed during long periods. The variations in swelling and bulk related in the last case are far from uncommon. Very often people, who in the full development of the mischief have been greatly swollen, dwindle and shrink as death due to the uncomplicated disease approaches. It appears to me that the varying reports of the conditions found after death have much of their explanation in this fact. It must be understood that loss of bulk is not necessarily a sign of downward progress. I have seen several cases in which women have lost with bulk the essential symptoms of the disease. Such improvement has been attributed to the effects of treatment, but my whole experience forbids me to accept implicitly this of course hopeful view, and compels me to recognise, at least in part, the fact that, independent of treatment, causes at present unrecognised give rise from time to time to large intensification or attenuation of the symptoms.

CASE 4.—I now submit the notes of a case at present under my care in Charity Ward, not because they present anything remarkable, but as possibly helpful in later analyses. S. B—, æt. 65, cook, widow, was admitted on January 13th, 1891. Her mother died of paralysis, and two of her brothers of apoplexy. Her father's family was very healthy. She has had four children, two of whom are living. She states that she has been always very healthy, and has never been laid up. As far as can be made out the symptoms of myxædema have been present for fourteen years, but have been more pronounced during the last two years. The later symptoms have consisted in feelings of weakness, of consciousness of being slower over her work, and of her legs giving way suddenly under her. She has noticed that her skin has been getting drier and browner, that her hair, previously abundant, has been falling rapidly, and that her memory of recent events has been very weak. For many years she has felt the cold of winter very acutely, her fingers constantly becoming numb and white. In October, 1889, she attended as an out-patient under Dr. Hadden, and was treated with *jaborandi*. She also took Turkish baths, but of late they have caused no perspiration. Indeed, she says that she has not perspired naturally for five years. She does not appear to have had any hæmorrhages, and the catamenia have been scanty. When admitted to hospital she wore a placid expression, combined with the typical face of myxædema. The skin of the face was distinctly sallow, pigmented, and not translucent. The lips and eyelids were swollen; the *alæ nasi* were thickened and broadened. A flush was present on the cheeks and chin. The skin of the body generally was dry and devoid of hairs. The swollen skin over the greater part of the body was resilient, but on each foot there was pitting on pressure. She stated that she had suffered from cramps in the calves. The tongue was large, pale, and flabby, appearing somewhat too large for the mouth. The soft palate was pale and swollen; the speech was slow, thick, and monotonous. There was no affection of the special senses, save that the eyesight had been failing of late. There was no sign of visceral disease. The thyroid gland could not be made out. The urine was high-coloured, acid, of

sp. gr. 1022 ; it contained a slight flocculent deposit of mucus, no albumen, no sugar, and no blood ; it gave a strong indican reaction.

Mental symptoms.—The patient said that her friends had asserted of late that she had become irritable and peevish. She herself felt generally rather drowsy. Her memory was defective, particularly in regard to recent events. She answered questions readily and quickly, and her articulation was on the whole fair, though the voice was thick. Her head fell forward when she walked, as though too heavy for the muscles of the neck, and the legs often gave way at the knees.

This case affords no help as regards causation. It indicates the tendency to pigmentation and opacity of the skin belonging to the disease in older patients, and probably also the far slower access of the serious symptoms belonging to the same period of life. This has been already mentioned. The difference is probably in part connected with the progressive changes in general nutrition proper to each period of life, in part determined by the diminishing importance of the thyroid gland as life advances.

I append a lithograph representing a portion of a beautiful section of the soft palate kindly presented to me by Dr. Sharkey. The specimen was taken from Case 1. I would draw attention to the great increase of connective tissue and nuclei, to the varying coloration of the tissue, and to the open spaces, which were not occupied by fluid, but by some material which could not flow.

DESCRIPTION OF PLATE II.

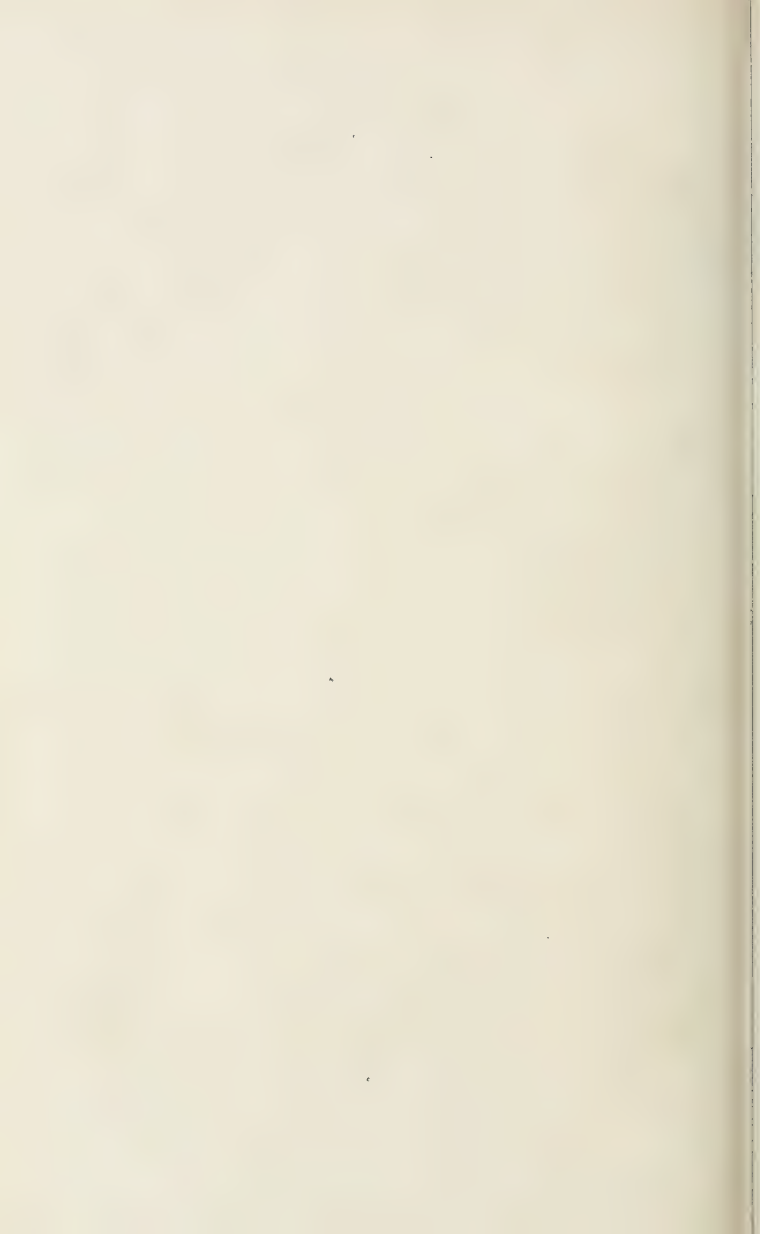
Illustrating Dr. Ord's paper on Recent Cases of Myx-
œdema.

The plate represents a section of the soft palate from the case of myxœdema in which cerebral hæmorrhage occurred. The section was stained with logwood. It will be seen that very different tints have been taken by the tissues. Three distinct tints besides that of the nuclei are given in the figure. In the preparation there are still more delicate gradations. The most delicate tint of all is taken by the substance filling the large interstitial spaces—the mucoid substance which, distending the translucent uvula and soft palate, did not flow out on incision as the fluid of ordinary dropsy would, but remained to react to the staining fluid. It will be seen that there is great thickening of arterial walls, evidently in part due to the same infiltration, thickening of nerves, and separation of the acini of the mucous gland by the same substance, while everywhere the fibrillation of connective tissue is accentuated by the intrusion. Here is what may be fairly called a good illustration of what the term myxœdema has been intended to indicate. The preparation was, as is stated in the text, made by Dr. Sharkey.



Don Lapidge. St. Thomas's Hosp.

Don Lapidge. St. Thomas's Hosp.



REPORT
OF THE
IN-PATIENT DEPARTMENT FOR DISEASES
OF WOMEN
FOR THE YEAR 1889.

By CHARLES J. CULLINGWORTH, M.D., F.R.C.P.

THE following report has been prepared on the same lines as the one for the previous year, commencing with a tabulated statement (1) of the number of patients admitted, with the results of treatment, and (2) of the diseases from which the patients suffered, classified as far as possible according to the authorized nomenclature. Then follow tables of the various operations that have been performed, and of the deaths that have occurred during the year. In the drawing up of these statistics I have again gratefully to acknowledge the kind assistance of one of my late residents, Mr. C. H. James, now of the Indian Medical Service.

For the special tables (ovariotomy, &c.), and for the detailed notes of cases appended to this report, the responsibility rests entirely with myself.

TABLE I.

General Statement of Patients in Adelaide Ward.

Number of Beds in Ward (including small Ward)	...	...	...	21
Number of Patients in Ward, Jan. 1st, 1889	...	...	...	14
" " Dec. 31st, 1889	...	...	...	10
" " discharged or who died during 1889:				
Cured	...	...	...	112
Relieved	...	...	...	74
Unrelieved or other causes	...	...	...	26
Died	...	...	...	9
Total	...	...	221	100·00

Rate per cent.

50·67

33·48

11·87

4·08

Average number of days of each patient's stay in hospital—25·15.

TABLE II.—General Table of Diseases.

DISEASE.	Number of cases.	Age.						Duration of residence.					REMARKS.			
		10-20	30-40	50-60	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured.	Relieved.		Unrelieved.	Died.	
I. DISEASES OF OVARIES.																
A. Cyst.																
a. Simple and multiple	13	4	4	1	2	1	2	8	2	10	2	1	12 of these cases underwent operation (see Special Table); the remaining one had signs of active syphilis, and was advised to return when this was cured.			
b. Malignant	1	1	1	1	1	1	1	1	1	1	1	1	Relieved by puncture.			
Tubo-ovarian cyst	3	1	1	1	1	1	1	1	2	2	1	1	All operated upon (see Special Table). All on right side.			
Parovarian cyst	1	1	1	1	1	1	1	1	1	1	1	1	See Special Table.			
II. DISEASES OF FALLOPIAN TUBES.																
Hydrosalpinx	2	1	1	1	1	1	1	1	1	1	1	1	The case cured had rest in bed; in the other case the condition was discovered during an operation for a cyst of the broad ligament (see Special Table, No. I).			
Pyosalpinx	2	2	2	2	2	2	2	2	1	1	1	1	Abdominal section. The case cured had pleuro-pneumonia after operation. Both cases resulted from old gonorrhoea.			
Hæmato-salpinx	1	1	1	1	1	1	1	1	1	1	1	1	Abdominal section; also intra-peritoneal hæmorrhage.			
Salpingitis	5	3	2	2	2	2	2	2	1	2	1	2	1 case cured by operation; 2 cases relieved by rest; 1 case unrelieved only remained in 5 days, and 1 refused operation. Pelvic inflammation detected in all the cases.			

TABLE II—continued.

DISEASE.	Number of cases.	Age.					Duration of residence.					REMARKS.				
		10-20	30-40	40-50	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured.		Relieved.	Unrelieved.	Died.	
III. DISEASES OF UTERINE LIGAMENTS AND OF THE ADJACENT PERITONEUM AND CELLULAR TISSUE.																
A. Hæmatocele.																
a. Intra-peritoneal	6	2	2	2	...	...	...	3	...	3	4	1	...	1	The fatal case was due to acute nephritis following abdominal section (<i>vide</i> Table). In another case in which abdominal section was performed a hæmato-salpinx was found. The case unrelieved went out at her own request.	
b. Extra-peritoneal	2	...	2	...	...	1	...	1	...	...	1	...	1	...	Of these cases, 6 followed on confinement or miscarriage; 2 were due to gonorrhœa; 1 to injury; 1 was tubercular, and was transferred to medical wards, and the cause of 1 is not stated.	
B. Inflammation.	11	2	9	...	...	...	1	2	4	4	5	1	...	...	Of these cases, 5 followed on confinement or miscarriage; 1 was supposed to be due to gonorrhœa; and in 1 the attack came on while the patient was attending a case of puerperal fever.	
b. Pelvic cellulitis	7	3	2	1	...	...	...	2	3	2	2	5	...	...	Of these, 6 followed confinement; 1 (the fatal case) was either malignant or tubercular, the peritoneum was studded with miliary granules; one followed the wearing of a pessary a year ago, a fecal fistula forming above the pubes; and the cause of 1 is not known. 5 cases were relieved by operation; 2 abscesses opened into rectum, 1 into vagina, 1 above pubes, and 1 patient refused operation and went out.	
c. Pelvic abscess.	10	4	3	2	...	1	...	1	...	5	3	5	4	...	1	Abdominal section. Malignant growth secondary to papillomatous growth of ovary.
c. Malignant of peritoneum	1	...	...	...	1	...	1	...	...	...	...	...	...	1	...	
DISEASES OF UTERUS AND CERVIX.																

The fatal case was due to acute nephritis following abdominal section (*vide* Table). In another case in which abdominal section was performed a hæmato-salpinx was found. The case unrelieved went out at her own request.

Of these cases, 6 followed on confinement or miscarriage; 2 were due to gonorrhœa; 1 to injury; 1 was tubercular, and was transferred to medical wards, and the cause of 1 is not stated.

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Of these, 6 followed confinement; 1 (the fatal case) was either malignant or tubercular, the peritoneum was studded with miliary granules; one followed the wearing of a pessary a year ago, a fecal fistula forming above the pubes; and the cause of 1 is not known. 5 cases were relieved by operation; 2 abscesses opened into rectum, 1 into vagina, 1 above pubes, and 1 patient refused operation and went out.

Abdominal section. Malignant growth secondary to papillomatous growth of ovary.

[illegible]

[illegible]

TABLE III.—*Operations performed during the Year.*

Abdominal section :

Cystic adenoma of ovary	9
Malignant papillomatous cyst of ovary	1
Suppurating cyst of ovary	1
Suppurating tubo-ovarian cyst	3
Cyst of broad ligament	2
Intra-peritoneal hæmatocele	1
Purulent salpingitis	4
Hæmato-salpinx with hæmatocele	2
Pelvic abscess	2
Removal of tubes and ovaries for uterine fibroids	1
Exploratory incision—	
Chronic peritonitis	1
Cancer of peritoneum	1
Retro-peritoneal tumour	1
Serous peritonitis	1
Intestinal obstruction (3 months after ovariectomy)	1=5
	— 31
Vaginal hysterectomy for cancer of cervix	2
Polypus uteri (fibroid)	2
Enucleation of fibroid of cervix uteri	1
Removal of cervix uteri (supra-vaginal) for hypertrophic elongation	1
" " " (infra-vaginal) for cancer	1
Vesico-vaginal fistula	1
Vesico-ute-o-vaginal fistula	1
Transverse septum of vagina	1
Lacerated perinæum	5
Total	46

TABLE IV.—*Causes of Death in Fatal Cases.*

Cancer of body of uterus (moribund on admission)	1
Cancer of neck of uterus " "	1
Tuberculosis: pelvic abscess, with fæcal fistula	1
Intestinal paralysis after abdominal section (for ovarian cyst), followed the same day by vaginal hysterectomy (for cervical cancer)	1
Chronic peritonitis, with intestinal obstruction, 3 months after ovariectomy	1
Septicæmia, after abdominal section: (1) for suppurating tubo-ovarian cyst; (2) for chronic suppurative salpingitis, &c.	2
Exhaustion, after exploratory incision in case of cancer of peritoneum	1
Acute nephritis, following abdominal section for double encysted intra-peritoneal hæmatocele (simulating double ovarian disease)	1
	— 9

Abdominal Section, including Ovariectomy.

The cases of abdominal section have been tabulated in three series: No. I, Ovariectomy; No. II, Tubo-ovarian Cysts; and No. III embracing all the cases not included under Nos. I and II. The ovariectomies were thirteen in number. All the patients recovered from the operation, but three of them have died since: one, five months after operation, from cancer of the bowel; another, a year and a half after operation, from cancer of the body of the uterus; and the third, four months after operation, from intestinal obstruction due to chronic peritonitis (chiefly affecting the duodenum and parts around), the cause of which, notwithstanding a careful autopsy, still remains unknown. Detailed notes are appended of each of the fatal cases (1, 3, and 7), and also of three non-fatal cases (5, 8, and 10) that seemed to offer points of special interest.

The second of the special tables is devoted to three cases of suppurating tubo-ovarian cyst, all of which happened to be under treatment at the same time. Having certain main features in common, they appeared to me to deserve a table to themselves. Full notes are added of each of these very interesting cases.

The third table is necessarily a collection of operations undertaken for very various conditions, in some of the cases the operation being simply exploratory. The three cases of intra-peritoneal hæmatocele form such an extremely interesting group, and have such an important bearing on the question, recently much debated, of the diagnosis and relative frequency of extra- and intra-peritoneal effusions of blood in the pelvis, that it has been thought worth while to describe them in detail. Particulars of the cases of tubal disease are reserved for a future report.

With regard to the method of operating, it differed but slightly from that adopted in the previous year. The anti-septic precautions were the same, except that the use of the carbolic acid spray was altogether discarded. Drainage was employed in most of the cases, and flushing of the peritoneum was adopted wherever it seemed desirable. The wound was no longer dusted with iodoform, and no ill effects were observed as a result of this omission. I have latterly adopted the plan

of leaving the ends of the silkworm gut sutures sufficiently long to allow of their being tied together in a knot, thus preventing them from lying in the wound (which, when cut short, they were very apt to do), and much facilitating their removal. The patients, except in very special cases, are now placed at once in the general ward, their beds being simply surrounded with screens for the first day or two. The moral effect upon the patients of the general disuse of the isolation ward has been excellent. Teaspoonfuls of hot water have been substituted for ice during the first twenty-four hours. It is necessary, however, to insist that the water be really hot and not merely warm, otherwise the sickness resulting from the anæsthesia is liable to be increased instead of being allayed.

SPECIAL TABLE I.—Ovariectomy.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Result of operation.	Remarks.
1	A. W.	Norwood	23	S.	1888 Dec. 10	Large cyst left ovary, filled with clots of fibrin (uncoloured) and blood-stained serum; many daughter-cysts, some containing papillomatous masses	Extensive; parietal	Size of hen's egg; contents soft, pulpy, granular-looking material; removed	None	R.	During operation narrow constricting band noticed around sigmoid flexure. After operation complete obstruction. Dec. 19th, inguinal colotomy. Death occurred from cancer of bowel, &c., in May, 1889, 5 months after operation. See Abstract.
2	F. S.	Camberwell	22	M.	1889 Jan. 14	Cystic adenoma left ovary; 32 fluid oz. dark brown fluid removed; outer end of tube expanded into cyst filled with altered blood; main body of ovary unaltered	Bands: intestinal, omental, and parietal	Size of walnut; not removed	18 hours	R.	Had been tapped Oct., 1888. Highest temp. after operation 100°·8°; from third day under 100°.
3	H. C.	Sevenoaks	58	M.	Jan. 31	Cystic disease right ovary; no true pedicle; ascites, 5 pints	Numerous and firm; parietal	Not seen	18 hours	R.	Highest temp. 101°·4°; usually below 100°. Death 18 months afterwards from cancer of body of uterus. See Abstract.
4	A. H.	Thorpe Green, near Chertsey	63	M.	March 7	Cystic adenoma of left ovary; weight (with fluid) 36 lbs.	Omental, parietal	Cystic, containing 13 fluid oz. serum; removed	44 hours	R.	Temp. midnight, day of operation, 100°·4°; at 8 a.m. next day 99°; afterwards normal. Went out well in 3 weeks.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Result of operation.	Remarks.
5	S. A. W.	Worfield, near Bridgnorth	22	S. (l. para)	March 21	Small suppurating cyst of left ovary, $3\frac{1}{2}$ in. $\times$ $2\frac{1}{2}$ in. $\times$ $2\frac{1}{4}$ in.	Pelvic wall	Twice natural size, universally adherent, contained several blood-cysts; removed	18 hours	R.	Temp. never above 100° ; after 5th day normal. See Abstract.
6	J. R.	Stroud	31	M.	April 4	Small cystic adenoma of right ovary, 5 in. $\times$ $4\frac{1}{2}$ in. $\times$ $3\frac{1}{2}$ in. Patches of papilloma on inner surface	Omental	One small cyst punctured and emptied; not removed	None	R.	Pleuro-pneumonia during convalescence, followed by thrombosis of left femoral vein. Went out well May 6th.
7	E. L.	Fulham Road	45	M.	May 2	Small cystic adenoma left ovary, $4\frac{1}{2}$ in. $\times$ $3\frac{1}{2}$ in.	None	Normal	None	R.	Suppuration in suture tracks. Patient readmitted Aug. for intestinal obstruction, due to peritonitis, and died Aug. 30, 4 months after operation. See Abstract.
8	M. M.	Aberdare	22	M.	June 13	Cystic adenoma right ovary developed in broad ligament; contents, 16 fluid oz. brown fluid; old firm blood-clot 1 in. $\times$ $1\frac{1}{2}$ in. behind and to left of uterus	None	Normal, surrounded by adhesions	44 hours	R.	Hæmatoma of right broad ligament 2 weeks after operation, depressing right vag. fornix, and extending $3\frac{1}{2}$ in. above pubes. Temp. slightly raised for 10 days. See Abstract.
9	M. E. M.	Little-hampton	68	W.	July 25	Cystic adenoma left ovary; contents $7\frac{1}{2}$ pints; dark viscid fluid; inner surface main cyst studded with echymoses	None	Normal, atrophied	None	R.	Highest temp. 99.4° .

NAME	AGE	DATE	LOCALITY	CONTENTS	HOURS	REMARKS
11 M. J. P.	Battersea	22 S.	Oct. 10	contents 1½ pints brown fluid Cyst of right broad ligament; contents 12 fluid oz. thick dark reddish-brown fluid; portion of cyst left in pedicle	Right ovary normal, left not seen; hydrosalpinx left, removed	24 hours R. Protracted convalescence; abscess opened 14th day, lower angle of wound.
12 E. J.	Lambeth	57 M.	Oct. 17	Cystic adenoma left ovary, almost completely embedded in broad ligament, enucleated; pedicle represented by broad ligament	Normal, atrophied	None R. Highest temp. 100°.
13 E. B.	Edmonton	23 M.	Dec. 5	Parovarian cyst right broad ligament, 3½ in. × 2½ in. Right ovary normal	Left ovary wrapped in and adherent to omentum; not enlarged, but reduced to a mere cyst-wall containing dark brown pulaceous material; inner surface papillomatous	None R. Discharged well on 18th day.

CASE 1. *Large cystic tumour of left ovary, smaller tumour of right ovary; annular stricture of large intestine; obstruction of bowel; colotomy; relief for several months; death from extensive cancerous growth in pelvis, five months after operation* (from notes by E. A. Roberts).—A. W—, æt. 23, single, housemaid, admitted November 26th, 1888, transferred to Surgical wards March 9th, 1889. No serious illness previously. Mild attack of smallpox two years ago. Present illness began a fortnight before admission, with pain in abdomen and back, which increased in severity. Patient had not observed any swelling in the abdomen.

On admission, stout, broadly built, well nourished, short in stature. Abdominal wall loaded with fat. Lower part of abdomen prominent and hard. Marked dulness over an area extending from pubes upwards to $\frac{1}{2}$ inch above umbilicus in middle line, on left to iliac crest, and on right to a line 4 inches to the right of the middle line. Swelling elastic, but not fluctuating. Greatest girth of abdomen $37\frac{3}{8}$ inches (3 inches above pubes). Girth at umbilicus $35\frac{3}{8}$ inches. Distance, umbilicus to pubes, 7 inches, to ensiform cartilage 6 inches, to anterior superior spine of each ilium 8 inches. Uterus high up, slightly deflected to right, moveable; canal of normal length. Tumour does not encroach on vagina, can be felt on pressing up vault of vagina anteriorly.

December 3rd, 1888.—Pain very severe; vomiting has occurred after every meal for past three days.

5th.—Looks very ill. Abdomen extremely tender. Tongue dry and furred. Repeated enemata have had little or no result.

Abdominal section, 10th.—Abdominal wall very thick. A layer, that appeared to be peritoneum, having been divided, another layer of similar appearance came into view, dark, flaccid, and extremely thin. On dividing this carefully and enlarging the opening, finger passed into a cavity, thought at first to be the general peritoneal cavity. It was very extensive, and turned out to be a cyst of large size, adherent to the anterior abdominal wall in patches, intimately adherent to the posterior parietal peritoneum, and extending high up beneath the ribs. The contents consisted of masses of fibrinous lymph, with softer masses in colour and consistence like brain-tissue,

and a considerable quantity of blood-stained serum, in which flakes of lymph floated. There were numerous daughter-cysts, some of which contained masses of papilloma. The abdominal incision having been enlarged to 6 inches, the cyst was separated from its adhesions, and was then found to have a good pedicle, 2 inches in breadth, and to have developed in the left ovary. The pedicle was tied and divided, and the cyst removed, along with the enlarged and congested Fallopian tube. Pouch of Douglas obliterated by adhesions. Right ovary, size of hen's egg, consisted of an outer shell, filled with a soft, pulpy, granular-looking material, the cut surface of which projected but did not exude. The ovary and adjacent tube, which was thickened and hyperæmic, were removed. A tumour was now felt deeply in left iliac fossa. This was brought into view, and found to be a hard band, constricting the large intestine in its entire circumference, and deeply grooved on its outer aspect all round. Peritoneal covering of bowel above and below band normal. A hard mass could be felt inside the bowel, above the stricture, which might be fæces or growth. The strictured bowel was replaced without further interference. Peritoneal cavity was douched, and abdominal wound closed. No drainage. Duration of operation (which was performed during a dense fog, by the light of a hand-lamp) two hours and ten minutes.

Patient was fairly well next day.

On the 12th she complained of flatulence, and began to vomit. No action of the bowels having taken place, and no flatus having passed, notwithstanding the administration of ten grams of calomel followed by oil enemata, several pints of soap and water were injected through the long tube on the 18th, but without result. There was considerable distension, and though the pulse was good, the patient's features were sunken, and there was persistent vomiting.

On December 19th Mr. Robinson, the res. assistant surgeon, performed left inguinal colotomy. After this the patient improved, and, except for the inconvenience of the artificial anus, remained for many weeks in fairly good condition.

On March 9th, 1889, she was transferred to the surgical wards, where she died, in the month of May, from cancer, originating apparently in the sigmoid flexure of the colon.

The ligatured pedicle was found in the centre of an abscess, surrounded by a large mass of cancerous growth. There was secondary deposit in the liver.

CASE 3. Large cystic adenoma of right ovary, with broad attachment to uterus, and ascites; tapped before admission; abdominal section; albuminuria during convalescence; recovery; death eighteen months afterwards from carcinoma of body of uterus (from notes by W. H. L. Copeland).—H. C—, æt. 58, married, admitted January 28th, 1889, discharged March 6th, 1889. Catamenia commenced at 11, ceased at 50. Married at 38, sterile.

A small swelling in right side of abdomen was noticed in July, 1888, and at same time there appeared a vaginal discharge of bright blood, which continued daily until a month ago. The hæmorrhage was usually slight in amount, but sometimes was sufficient to soil two or three napkins in a day. The swelling increased in size. For the last three weeks the legs have been swollen from the knees downwards. The breathing, which had been affected from the first, became so much embarrassed that the doctor considered it advisable to tap her, and did so on January 23rd, five pints of thick, dirty-brown fluid being removed. This operation gave immediate relief, but the swelling did not appear much smaller. The patient had done the work of the house up to this time.

On admission the whole abdomen is enlarged, with marked bulging in right hypochondrium, left flank, and epigastrium. Girth at umbilicus 37 inches; distance from umbilicus to pubes $8\frac{1}{2}$ inches, from umbilicus to ensiform cartilage $7\frac{3}{4}$ inches, from umbilicus to anterior superior spine, right ilium, $8\frac{3}{4}$ inches, from umbilicus to anterior superior spine, left ilium, $9\frac{3}{4}$ inches. On left side there is distinct evidence of the presence of fluid. From side to side of the tumour the thrill is less clear. The tumour is much more tense on right side than on left; it varies in consistence in different parts. Front of abdomen dull on percussion from pubes upwards to $2\frac{1}{2}$ inches above level of umbilicus, and to a line 2 inches below costal margin on each side; above this the dulness becomes less marked. The note over the prominent epigastrium is tympanitic, and there is a finger's breadth of reso-

ance below the ribs on each side. The dulness extends $6\frac{1}{2}$ inches to left of umbilicus, and $7\frac{1}{2}$ inches to right. The left flank is dull as patient lies on the back, but becomes resonant when she lies on right side. Heart's impulse feeble, felt most distinctly half an inch above and internal to the nipple. Œdema of lower part of trunk, and of both legs from knees downwards.

Vagina elongated, posterior formix reached with difficulty. Tumour felt distinctly as a hard, unyielding mass, through anterior vaginal wall. Cervix small, high up behind tumour. Sound passes $2\frac{1}{2}$ inches, a little to left and behind the tumour. Fundus can be felt *per rectum*. Uterus moveable to a certain extent independently of tumour. Bladder depressed, fundus cup-shaped, bladder-sound passing some distance both before and behind lower segment of tumour; in front it passes an inch above top of pubes.

Temperature normal in morning, 99° to 99.6° in the evening. Pulse 84; arteries rigid. Urine, sp. gr. 1022, dark, clear, containing a faint trace of albumen.

Abdominal section (January 31st).—Five pints of straw-coloured ascitic fluid. Tumour white and glistening. Firm adhesions along upper and right anterior surfaces. No true pedicle. Broad attachment to right cornu of uterus. Uterus enlarged, and studded with small solid tumours from size of a pea to that of a walnut. Adhesions separated; incision enlarged. Aperture made by trocar previous to patient's admission patent, thick gelatinous material exuding from it. The connection between tumour and uterus being so broad, two guarded pins were passed through neck of tumour, and a strong *écraseur* wire below them, tightened by *serre-nœud*. The tumour was then cut away a little distance above the pins. As it was found to present the usual appearances of a cystic adenoma of the ovary, the neck of the tumour was transfixed by a needle armed with a double ligature, and further secured by a stout encircling ligature, pins and wire being then removed. A portion of the growth was thus left adherent to the uterus, and made to serve the purpose of a pedicle. The stump was trimmed, a loop of normal Fallopian tube being cut away in the process. No bleeding; ligatures cut short; peritoneal cavity douched and sponged. Douglas's

pouch being obliterated by adhesions, a drainage-tube 4½ inches long was passed to the most dependent part at the left of the uterus. The omentum was drawn down, and the abdominal wound closed by silkworm gut sutures.

Operation lasted two hours, and was well borne.

Tumour, after removal of a pint and a half of gelatinous material, weighed 5 lbs.; it consisted of an immense number of small cysts, containing thick jelly-like material.

Vomited once same evening; not afterwards. Tube removed next day and stitch tied. Morphia administered subcutaneously on account of pain at 8 p.m., January 31st; 5.45 a.m., February 1st; 9.30 p.m., February 1st; and 1.15 a.m., February 3rd. Temperature at 5 p.m. on January 31st 97°, at 8 p.m. 98.6°, at midnight 99.2°. For next twelve hours it varied from 98.6° to 99°. From 4 p.m. on February 1st to 4 a.m. on the 3rd the minimum temperature was 100°, the maximum 101°, after which it did not again reach 100° until February 7th. On that day the patient was restless, complaining of pain in right thigh, and the urine was found to contain one fifth of albumen. The temperature rose to 100°, and varied between 99.6° and 101.4° up to February 10th, after which it was normal. The amount of albumen gradually diminished, until on the 11th there was only one fifteenth. Most of the stitches were removed on the 8th, the remainder on the 11th. On the 14th the patient was allowed to sit up, and on March 6th went home well.

Sequel.—On July 26th, 1890, a letter was received from Mr. J. E. Blomfield, of Sevenoaks, from which the following is an extract:—"I saw Mrs. C— in July, 1889. She was complaining of pain down the front of the right leg, and other more vague symptoms. There was some suspicion of a lump above Poupart's ligament on the right; the urine contained blood and casts, which subsided after a time, leaving some albumen. In August the uterus was enlarged to the size usual just after labour, and there was an irregular hard mass in right iliac region. In July, 1890, she died, mass having reached to umbilicus; she had suffered from attacks of diarrhœa, with blood and foul-smelling matter, and had become greatly emaciated. Abdomen opened after death; ovoid lump in lower abdomen springing from pelvis. When cut into, mus-

cular tissue $\frac{1}{4}$ inch, and then hard carcinomatous mass with puriform fluid. Os uteri healthy as examined by finger. Carcinoma of body of uterus."

CASE 5. *Small suppurating cyst of left ovary; chronic inflammation of both Fallopian tubes, pelvic peritonitis; symptoms extending over five years; abdominal section; removal of both ovaries and both tubes; uninterrupted recovery* (from notes by W. H. L. Copeland and L. Cobbett).—S. A. W—, æt. 22, single, residing near Bridgnorth, admitted February 7th, 1889; discharged April 25th, 1889.

Menstruation commenced at twelve; was delivered of a full-term child at the age of fourteen years ten months; labour natural, followed by some hæmorrhage. No subsequent pregnancy. Two years after birth of child began to suffer from pain and swelling in the right iliac region, and a yellow discharge from vagina, for which she was treated at Bridgnorth Infirmary with internal caustic applications. She was discharged better, but has never been quite well since. Two years later she had a recurrence of the symptoms, and again underwent a course of treatment in the same hospital. Five months ago caught cold during a menstrual period; an attack of shivering took place, and the menses ceased for a few days. In two months from this time she was admitted into the Bridgnorth Infirmary for the third time, and after six weeks was transferred to St. Thomas's.

On admission patient pale and depressed, not emaciated. She complains of pain in back and in right iliac region. Menstruation is scanty; the discharge pale in colour. Urine loaded with lithates; no albumen. Temperature normal, though it had been high up to the day of admission. *Per vaginam*: Uterus normal in length, fixed, and strongly flexed to the right. Extending from cervix to left pelvic wall is felt a thick, smooth, hard, elastic, and slightly moveable mass, the outer extremity of which is three quarters of an inch internal to the anterior superior spine of the left ilium, and on a level with it. Anterior surface of swelling less even and more sensitive than posterior.

On March 19th, the swelling being no less, and patient, though less anæmic, being still unable to move about, it was

decided to make an exploratory incision, operation having been hitherto deferred on account of the temperature having undergone a change for the better from the day of admission. It has only twice (on February 11th and March 1st) exceeded the normal.

Abdominal section, March 21st, 1889, 2 p.m.—An incision, 4 inches long, in median line. Cystic tumour to left of uterus adherent posteriorly. On being separated and brought into view it was seen to be a small ovarian cyst $3\frac{1}{2}$ inches long by $2\frac{1}{4}$ inches wide, with the Fallopian tube thickened and dilated adherent to it over its posterior surface. Cyst and tube were removed together after transfixion and ligature of the pedicle. Right tube dilated, its walls œdematous, its fimbriated extremity adherent to the floor of Douglas's pouch. Right ovary double the usual size, and almost universally adherent. Adhesions having been separated, ovary and tube removed in the same manner as those on the left side. Peritoneum cleansed by sponges. A 5-inch glass drainage-tube inserted. Omentum drawn down; abdominal wound closed by silk-worm gut sutures. Operation, sixty-five minutes. The ovarian cyst was filled with thin flocculent pus; in its wall were small cysts containing clear viscid fluid.

The dressings were changed on the evening of the day of operation and at ten the following morning. On each occasion the pads were stained with blood-stained serum, and $2\frac{1}{2}$ fl. dr. of similar fluid were withdrawn by pipette. At the second dressing the tube was removed and the loose stitch tied. No sickness since operation; no distension; temp. normal. On March 23rd flatus and urine were passed voluntarily. The bowels were relieved by enema on the 26th. The stitches were removed on the 29th. The temperature never exceeded 100° , and after the 24th was uniformly normal. The patient's convalescence was uninterrupted, and she went to a convalescent home on April 25th.

CASE 7. Small cystic adenoma of left ovary; ovariectomy; suppuration about suture tracks; recovery; persistent abdominal pain afterwards; symptoms of intestinal obstruction three months after operation; abdomen reopened; no cause of obstruction discovered; death; autopsy; old peritonitis affecting small intestine (from notes by S. G. Toller and C. J. Martin, B.Sc.).

—E. L—, æt. 45, married, lady's-maid, resident in Brompton, admitted April 29th, 1889; discharged June 5th; readmitted August 27th; died August 30th.

Had one child twenty-one years ago. Menstruation regular; never too frequent or profuse. Abdominal swelling first noticed ten years ago; not seen by a doctor until two years ago. In good health, but occasionally has pain after walking and during any exertion in the left leg, in the tumour itself, and more rarely in the right leg.

An oblong, smooth, firm, elastic, perfectly moveable tumour, 4 × 3 inches, perceptible, not on inspection but on palpation, in lower part of abdomen, immediately above pubes and to right of middle line. It is doubtful whether the tumour is solid or a tense cyst. It can be moved bodily over to left side, and even pushed up into the left flank, so that it can be grasped between the hands as it projects from the side. It is slightly tender. The uterus lies behind the tumour; canal of normal length; fundus inclined towards left. Movement of tumour influences uterus very slightly.

Abdominal section, May 2nd, 1889, 2 p.m.—Small, multilocular, cystic adenoma of left ovary, $4\frac{1}{2} \times 3\frac{1}{2}$ inches; no adhesions; removed entire, with outer portion of corresponding tube, the incision being enlarged to $5\frac{1}{2}$ inches. During the operation the intestines protruded a good deal. The opposite ovary was healthy. No drainage.

May 5th.—Temperature normal; has not exceeded 99.4° since the operation. In the evening some distension and rise of temperature (101°).

6th.—No flatus passed since yesterday. Rectal tube used, with the result that some flatus passed. There being still some distension, an enema was given, but without effect. A second was given by means of the long tube, with good result. Still the abdomen remained distended, and at 11.30 p.m. the temperature rose to 103.6° , pulse 106, respirations 34. The patient meantime had no pain, and neither looked nor felt ill. Next morning the temperature was 100° , pulse 98; abdomen less distended; flatus passed voluntarily. In the afternoon the bowels acted involuntarily and copiously without medicine or enema. On the 8th the temperature was normal. The stitches were removed on the 10th; the tracks of all the

sutures were inflamed and suppurating, this being the first case for many months in which this has occurred. On the 11th, there being redness and œdema along the whole wound, free incisions were made on each side, giving vent to a quantity of thick pus. Temperature from May 12th normal.

June 3rd.—Another little accumulation of pus beneath granulations in wound.

5th.—Left the hospital. *Per. vag.* No exudation in pelvis, uterus adherent by fundus to abdominal wall.

For a week or two after going out patient had occasional pains in the abdomen. At the beginning of August she called at St. Thomas's to report herself; she then had some discomfort in the umbilical region, but this passed off. The bowels acted regularly until Thursday, August 22nd, when she was taken seriously ill, and sent for Dr. Ridley Webster. She was suffering from symptoms of intestinal obstruction with pain and vomiting. In the afternoon of the 23rd, an hour after taking a dose of castor oil, and again in the evening after the first enema, the vomiting was fæcal. Repeated enemata were given without effect until the evening of the 26th, when the bowels acted. During the night the pain and vomiting returned, and on the 27th she was readmitted to the hospital. There was no tumour or distension. During the night and on the 28th, she vomited, several times, about a pint of dark green sour-smelling liquid. The vomiting not ceasing, and there being no action of the bowels after an olive-oil enema, and $\frac{1}{2}$ gr. ext. belladonna every four hours, it was decided to reopen the abdomen. This was done under ether at 10 a.m. on the 29th. The stump of the pedicle was found adherent to the sigmoid flexure, and to the fundus and left cornu of the uterus. These adhesions were separated, and the ligature silk, which had secured the pedicle, came away while this was being done. The raw surface left on the fundus uteri was sewn up by means of six fine silk sutures. No part of the intestine was distended, and no cause for the obstruction was discovered. There were some adhesions between the intestine and the parietal peritoneum in the neighbourhood of the abdominal incision, but these were unimportant. The peritoneal cavity was cleansed with sponges, a drainage-tube

inserted, and the abdomen closed. The pulse and temperature after operation were as follows :

				Temp.	Pulse.
Aug. 29	...	2 p.m.	...	97°	120
		4 p.m.	...	97	120
		8 p.m.	...	98·8	140
		Midnight	...	98·2	148
30	...	5 a.m.	...	101	158
		8 a.m.	...	103	—
		Noon	...	104·4	176
		4 p.m.	...	103	—
		8 p.m.	...	104·4	—

The patient quickly sank on the 30th, and died at 8.15 p.m.

Autopsy, August 31st.—On opening abdomen, omentum was found congested and adherent to its anterior wall, especially near the incision. Very little fluid in abdominal cavity. The small intestines were greatly distended, especially the duodenum, which nearly equalled in size the healthy large intestine. The large intestines were collapsed. The small intestine, especially at a point three or four feet above the cæcum, showed signs of old peritonitis, being intensely congested at the attachment of its mesentery, and constricted in parts. No band was found causing the constriction, but the coils were adherent to each other and acutely flexed upon themselves in three or four places. Above this point the distended intestine was congested in patches, and had lost its polish. No perforation. The affected intestinal coils lay to the right of the abdomen, which accounts for their not having been seen during the operation. The sigmoid flexure was adherent to the abdominal wall by older adhesions, which were tough and yellow. The uterus was adherent to the abdominal wall at a point opposite to the left femoral ring. The surfaces of uterus and sigmoid flexure, separated at the operation, had taken up these points of attachment.

Liver and spleen normal. Kidneys congested, otherwise normal.

Lungs showed hypostatic congestion, and were emphysematous.

Heart normal.

Bladder contained a small amount of yellow fluid, apparently pus.

CASE 8. *Cyst of right ovary developed in broad ligament; hæmatocele in left posterior quarter of pelvis; abdominal section; removal of cyst and blood-clot; formation of hæmatoma of right broad ligament on 14th day; recovery* (from notes by A. W. Musson).—M. M—, æt. 22, married, residing at Aberdare, admitted June 3rd, discharged July 13th, 1889. Menstruation regular up to marriage, three years ago. No children, three miscarriages. Last miscarriage nine months ago, at tenth week of pregnancy. Catheter required for a week. Some days later had an attack of shivering, with severe pain in hypogastric and right iliac regions, and followed by sickness and constipation. A swelling was then found in the right iliac region. It was thought to be a pelvic abscess, and was punctured with a hypodermic syringe, a small quantity of thick, glairy fluid being withdrawn. Patient was confined to bed for three months. After that was able to move about, but frequently suffered from severe abdominal pain. Menstruation occurred regularly.

On admission, a spare, healthy-looking woman. Temperature normal, pulse 70; urine clear, acid, sp. gr. 1020, no albumen or sugar. Slight fulness in right iliac region. Feeling of resistance above symphysis pubis, extending 3 inches beyond the middle line; dulness on percussion over a central area 2 inches in diameter. Bimanually a rounded, very elastic tumour in front and to right of uterus, not moveable to any considerable extent independently of uterus, but not absolutely springing from or attached to it. Behind and to left of uterus a smaller tumour, elastic, oval in shape. The larger tumour presented evidence of fluctuation, the smaller did not. Uterus normal in length, its mobility impaired.

Abdominal section, June 13th, 2 p.m.—Tumour exposed, had not the ordinary silvery white appearance of an ovarian cyst. It proved to be a cyst of the right ovary, developed in the broad ligament, the walls of which were greatly thickened. The greater part of the ovary was unaffected by disease. The tumour was without pedicle. Sixteen fluid ounces of dark brown fluid were withdrawn by tapping, and the broad ligament was then transfixed and tied as low down as possible; a small portion of the cyst was unavoidably included in the pedicle. The ovary and a portion of the round ligament were removed

with the cyst. The cyst was single, and beneath its lining membrane was a thin layer of extravasated blood. The smaller tumour, on the left side, was enucleated, and proved to be an old and firm clot, of deep brownish-red colour, surrounded with a coating of clot, lighter in colour, to which shreds of membrane adhered. The clot was egg-shaped, $1\frac{1}{2}$ inches long, 1 inch broad. The cavity in which it lay was bounded in front by the uterus; its other walls were formed by adhesions. Through an opening in its floor the finger passed downwards into Douglas's pouch, whence there welled up a quantity of blood-stained serum. The tubes and left ovary were not removed, and the adhesions were not further interfered with. A glass drainage-tube was inserted, and the abdominal wound was closed.

For the first twelve days convalescence proceeded normally, the highest temperature recorded being $100\cdot8^{\circ}$.

On June 26th there was pain in the right groin, and the patient looked ill and lost her appetite. On the 29th a large mass was felt, occupying the right side of the pelvis, and causing some bulging into the vagina, the right fornix being obliterated and the cervix pushed over to the left. The mass reached to a line $3\frac{1}{2}$ inches above the ramus of the right os pubis, and $3\frac{1}{4}$ inches to the right of and below the umbilicus. There was now no pain or tenderness. On July 13th the patient went home against advice. The swelling had become much softer and smaller.

				Temp.					Temp.
June 26	...	p.m.	...	$99\cdot4^{\circ}$	July 1	...	a.m.	...	99°
27	...	a.m.	...	$99\cdot4$			p.m.	...	$100\cdot6$
		p.m.	...	$100\cdot2$	2	...	a.m.	...	$98\cdot8$
28	...	p.m.	...	$101\cdot8$			p.m.	...	$99\cdot8$
29	...	a.m.	...	$100\cdot6$	3	...	a.m.	...	$99\cdot2$
		p.m.	...	$100\cdot8$			p.m.	...	$99\cdot4$
30	...	a.m.	...	$99\cdot4$	4	...	a.m.	...	$100\cdot4$
		p.m.	...	$99\cdot2$			p.m.	...	$100\cdot2$
					5 to 12	...	Normal.		

CASE 10. *Cystic tumour of right ovary, with twisted pedicle, resulting in inflammation of the cyst-wall and surrounding parts, and extravasations of blood in the pedicle; abdominal section; removal of tumour; recovery* (from notes by C. J.

Martin, B.Sc.).—E. B—, æt. 35, residing at Peckham, admitted July 29th, discharged August 24th, 1889.

Married, eight children, last one twelve months ago. No unusual swelling noticed during last pregnancy, but after confinement remained large. Knew nothing of a tumour until examined in the out-patient room. Nine months ago had an attack of acute pain in left iliac region, spreading over lower part of abdomen; in bed three or four days; then remained well for five months. Seven weeks ago had another attack of severe pain in lower part of abdomen during an intermenstrual period, lasting four days. Since then has felt ill and unable to move about.

On admission, some bulging in the lower part of the abdomen, chiefly on left side. Swollen part soft, not tender. No œdema or enlarged veins. Dulness extending from pubes to $\frac{3}{4}$ inch below umbilicus; laterally, 3 inches to right, 5 inches to left of middle line. Resonance above outer half of Poupart's ligament on right, none on left. On palpation, an elastic, fluctuating, moveable tumour extending a little beyond the area of dulness in all directions. Uterus normal in size, body displaced to right; cervix pushed downwards and forwards.

Abdominal section, August 1st, 2 p.m.—Omentum doubled upon itself, lying in front of tumour, adherent by its whole posterior aspect to the anterior part of tumour, which it completely concealed from view. Above and below incision, omentum adherent to abdominal wall. The very firm omental adhesions having been separated and the tumour partially exposed, further and universal adhesions were found to exist over the entire surface. Several coils of intestine had to be slowly and carefully separated, besides adhesions to vermiform appendix and posterior pelvic wall. The tumour was a thin-walled, dark-coloured, single cyst of the right ovary, containing a pint and a half of brown fluid, which was evacuated by the trocar after some of the more important adhesions had been separated. The pedicle was tightly twisted on its axis, the tube and a portion of the broad ligament being twisted with the pedicle and closely adherent to it. The tube was slightly thickened and dilated, and contained a little blood-clot; its fimbriated extremity was closed, and the fimbriæ inverted. The twisted portion of broad ligament showed a

constriction, above and below which a considerable quantity of blood had become extravasated into its tissues, forming two tumours, with the larger of which some ovarian tissue was mixed up. The pedicle, when divested of its surroundings and straightened, was a mere stalk. The uterus, left ovary, and left tube were normal. A good many bands of adhesions could be felt passing from the posterior wall of the cervix to the posterior wall of the pelvis in Douglas's pouch. Several vessels required ligature during the operation, especially in the omentum. The operation lasted an hour.

Convalescence was uninterrupted, the temperature being normal for the first three days and on and after the sixth. At no time did it reach higher than 99.8° .

SPECIAL TABLE II.—*Abdominal Section for Removal of Suppurating Tubo-ovarian Cysts.*

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary, &c.	Glass drainage tube.	Result of operation.	Remarks.
1	A. C.	Edmonton	40	M.	1889 Nov. 18	Right tube much elongated and enlarged, with thickened walls, communicating with ovarian cyst by opening large enough to admit finger; contents suppurating	Universal; pelvic	Cystic, size of orange; inner surface papillomatous; removed	44 hours	R.	Broncho-pneumonia (septic?) at time of operation, and general condition highly unsatisfactory. Temp. two days before 104.8°; evening of day of operation 101.6°; afterwards never exceeded 99.6°.
2	C. D.	Norwood	29	M.	Nov. 25	Right tube much thickened and lengthened, communicating with cyst of ovary by opening $\frac{1}{2}$ in. in diameter; contents suppurating. Left tube in a state of suppurative inflammation also	Universal; pelvic	Not seen	50 hours	D.	Septicæmic when operated upon; temp. 102.6°; very ill. Died from peritonitis 5.30 a.m., Nov. 29th, having had artificial anus made previous day for intestinal obstruction.
3	R. H.	Wandsworth	54	M.	Dec. 5	Right tube irregularly distended, communicating with cyst of ovary by an aperture large enough to admit a goose-quill. Portion of tube removed = 6 $\frac{1}{2}$ in.; contents suppurating, fetid	Universal; dense; pelvic	Cystic, 1 $\frac{1}{4}$ in. $\times$ $\frac{3}{4}$ in., removed to check growth of bleeding fibroid	26 hours	R.	Temp. before operation normal in morning; 99.8° to 100.4° in evening. Patient weak and blanched; admitted for hæmorrhage; attack of acute endocarditis during convalescence.

CASE 1. *Suppurating tubo-ovarian cyst of right side; tube greatly enlarged and thickened; thick-walled cyst of hilum of left ovary with patch of proliferating vegetations on inner surface; removal by abdominal section while patient in a condition of acute septicæmia; recovery* (from the notes of W. R. Carter). —A. C—, æt. 40, married, residing at Edmonton, admitted November 8th, 1889, on the recommendation of Dr. Green.

The catamenia commenced at sixteen, periods lasting seven days; pain during the two days preceding the flow, and the first three days after it appeared. For the past five years periods have only lasted three days. Has had no children and no miscarriages. Had typhoid fever eight years ago. Has been for many years subject to a winter cough.

Before the last five weeks had not noticed any swelling of the abdomen. At that period was seized with stabbing pain in the lower part of the abdomen. Three weeks later Dr. Green was called in, and found her suffering from general bronchitis, pains of a rheumatic character, abdominal pain, and vomiting. Her temperature was then 102°. The abdomen was too tender for careful examination, but there was an ill-defined tumour in the lower part of the abdomen, and a mass could be felt *per vaginam*, tender and elastic. During the examination the patient volunteered the statement that it gave rise to a pain such as had, for some months, been caused by each act of sexual intercourse.

On admission patient looked extremely ill. Her breathing was difficult, and she complained of pain and tightness across the abdomen. The lower part of the abdomen was enlarged, and was found to be occupied by an ill-defined, soft, elastic tumour. There was dulness on percussion over an area extending 5½ inches upwards from the pubes, *i. e.* to a line 2 inches below the umbilicus. The dull area measured 7 inches in its greatest breadth (3 inches above pubes), *i. e.* 3 inches to right and 4 inches to left of middle line. For a distance of 2 inches above and to each side of this area of absolute dulness the dulness gradually shaded off. The uterus was pushed forwards and to the left, the fundus lying to left of middle line, 2½ inches above Poupart's ligament. Bimanually, the abdominal tumour could be felt extending from right lateral wall of pelvis nearly across to left. Uterus fixed, but

capable of slight independent movement between the two hands. Size normal. Tumour in its vaginal aspect smooth, uniform, elastic, and tense.

There were patches of pneumonia at both bases, with general bronchitis. Tongue thickly coated.

November 12th.—Occasional vomiting; much pain in right side of abdomen and down right leg.

15th.—Upper margin of swelling can be felt at level of umbilicus.

16th.—Tumour aspirated; 18 fl. oz. of foetid pus withdrawn.

Temp.				Temp.			
Nov. 8	...	100·2° to 102·2°		Nov. 13	...	100° to 101·8°	
9	...	100·4 „ 102		14	...	100·6 „ 102	
10	...	100·4 „ 101·4		15	...	101·4 „ 103	
11	...	101 „ 102·6		16	...	101·2 „ 104·8	
12	...	100·8 „ 102·6		17	...	99·8 „ 102·2	

Pulse 90 to 120; usually 100 to 112. Respirations 36 to 48.

18th. *Abdominal section.*—Tumour not adherent to anterior abdominal wall; adherent to omentum, intestine, and pelvic wall; not widely to uterus, and not at all to appendages of left side. The greatly thickened and elongated right tube wound round the tumour, which was thick-walled and vascular. A puncture was made with a small trocar, and 26 fl. oz. of foetid pus withdrawn. The opening having been clamped, an endeavour was made to ascertain the relations of the tumour. It was found to pass from right side of uterus and to be doubled backwards upon itself, the main mass being behind the uterus, bound down to pelvic wall below and behind by old and very firm adhesions. The work of separation was difficult and prolonged, and several encysted intra-peritoneal collections of pus were opened during the process. A ligature was placed around the tube and adjacent portion of broad ligament as near the uterus as possible. The omental adhesions were tied before separation. The tube, 7 inches in length and $\frac{3}{8}$ to $\frac{7}{8}$ inch in width, was then removed along with the cyst. The inner surface of the cyst was ulcerated, and the tube communicated directly with its interior by a smooth aperture, $\frac{1}{2}$ inch wide. The cyst had developed from the right ovary.

A round thick-walled cyst was discovered on the left side,

and removed along with a loop of the left tube. It proved to be a cyst 3 inches in diameter developed in the hilum of the left ovary; on its inner surface was a patch of proliferating vegetations.

The peritoneal cavity was douched with hot boracic solution, and a drainage-tube inserted. The abdominal wound was then closed. The operation lasted two hours.

In the evening the cough and breathing were very troublesome; face pale, lips livid, pulse weak. A morphia injection was administered, and two teaspoonfuls of brandy ordered to be given every hour.

19th.—General condition improved.

20th.—Passed a good night. Sick for first time at 4 a.m. and at 8 a.m. Otherwise better. Has been able to pass urine voluntarily, and has passed flatus. Very little discharge. Tube removed at 10 a.m.; stitch tied. 4 p.m., much collapsed; face livid; pulse feeble; thought to be sinking. Ether was injected subcutaneously, and, later, the chest was rubbed with Lin. Terebinth. Rallied in the evening, and passed a good night.

21st.—Slight distension of abdomen; a little serum on pad escaped from abdominal incision. 4.30 p.m., rectal tube passed, with result of passage of flatus.

22nd.—Sickness continues from time to time. 4 p.m., bowels acted for first time; motion relaxed, of healthy odour.

		Temp.				Pulse.		Resp.	
Nov. 18	...	100·6°	to 101·6°	...	145 to 164	...	60 to 64		
19	...	98	„ 99·8	...	108 „ 128	...	36 „ 48		
20	...	97·6	„ 98·4	...	118 „ 132	...	34 „ 48		
21	...	97·4	„ 99·6	...	120 „ 146	...	30 „ 48		
22	...	98·4	„ 99·8	...	120	...	30 „ 34		

23rd.—Abdomen less distended; some œdema of right foot. Bowels relieved six times since yesterday afternoon. Temperature normal, pulse 112.

25th.—Diarrhœa continues; ordered enema of starch and opium.

27th.—No diarrhœa. Stitches removed. Patient still weak and prostrate, lying motionless on back, but interested in what is going on, and evidently better.

December 6th.—Allowed to be propped up in bed.

18th.—Allowed to be out of bed.

22nd.—Discharged well.

The next case ended fatally from peritonitis. The patient had been under my care for pelvic cellulitis twelve months previously. In the light of subsequent events I cannot but regret not having proposed an operation at that time, as there can be little doubt that the tubes were already in a state of chronic inflammation. The physical signs, however, due to the cellulitis obscured the diagnosis, while the marked improvement after a few weeks' rest confirmed me in my opinion that operative interference was not then called for.

CASE 2. *Suppurating tubo-ovarian cyst of right side; tube greatly enlarged; left tube inflamed and occluded; abdominal section; death from peritonitis; autopsy* (from notes by W. R. Carter).—C. D—, æt. 29, married, residing at Norwood, admitted November 23rd, 1889.

Had been in Adelaide Ward for six weeks during the year 1888, viz. from October 3rd to November 17th.

Catamenia commenced at nineteen; married at twenty-one; two children, one miscarriage. First child born eight years ago at seventh month; second born soon afterwards at sixth month, surviving its birth only for forty-eight hours. After the first labour, which was instrumental, there was incontinence of fæces from perinæal laceration. An operation performed at Guy's Hospital seven years ago for the repair of the laceration was followed by abscess, and proved unsuccessful. Since that time she had frequently suffered from pain in the lower part of the abdomen. Contracted syphilis from husband soon after marriage; suffered from sore throat and aphonia, and has since attended the eye department for a syphilitic affection of the eye. Since midsummer of 1889 has been separated from her husband on account of his misconduct.

Three *months* before her previous admission patient had begun to suffer from uterine hæmorrhage, and three *weeks* before had been seized with sharp pain in the back and left iliac region, accompanied with vomiting and diarrhœa. The note as to the physical signs in October, 1888, is as follows:—Perinæum represented by a narrow cicatricial band. Uterus low down, inclined to left and fixed. Hard swelling in left

fornix, which is bulged downwards. Swelling felt also high up behind, and to right of uterus less marked than on the left, and causing no depression of right fornix. Temperature on admission (October 3rd, 1888), 99.4° ; next two days, normal; October 6th, 99° ; 7th, 99.4° to 99.8° ; 8th, 99.4° to 100.4° ; 9th, 99.4° to 101° ; 10th, 100.6° ; 11th, 99.2° to 99.6° ; 12th, 98.4° to 99.2° .

On October 18th the condition had somewhat improved. A few days later a vaginal examination showed thickening in the situation of both broad ligaments, especially the left. The depression of the left fornix was lessened; there was still no depression of the right. The examination was followed during the next forty-eight hours by throbbing pain on the right side.

On November 5th the patient was so much better as to be allowed to be up, and on the 13th she left the hospital, expressing herself as feeling better than she had done for years.

Six weeks before her readmission she was seized one morning with pains of a shooting character down the right side of the stomach, which continued more or less for three weeks. About the end of that time, when a menstrual period had just closed, she one night took a hot bath before going to bed. In the night she was awaked by a drunken man banging at the street door and demanding admission. She went downstairs twice to remonstrate with him. A few hours later she awoke with shiverings; these were soon followed by profuse hæmorrhage and very acute pain down the right side of the abdomen. From this time patient has been in bed. On the fifth day she went into Wandsworth Infirmary, where she remained, however, only for six days.

On admission she was thin and pale, with a look of extreme illness and suffering. The *alæ nasi* dilated during respiration. The temperature was 102.6° , pulse 100, respirations 40. Tongue coated; sordes on teeth and lips; nausea. Urine, sp. gr. 1028, acid; no albumen, no sugar.

Heart and lungs normal.

No prominence of abdomen. Below umbilicus an irregular swelling, dull on percussion, extending from pubes upwards in middle line 3 inches, and measuring 4 inches in width.

On vaginal examination a clot was found lying in the

vagina. The uterus, normal in size, was pushed over to the left side, and was fixed. The point of the sound, passed up to fundus, impinged on the abdominal wall $1\frac{1}{2}$ inches to left of middle line and 1 inch above the spine of the left os pubis. Left fornix nearly obliterated. Behind the upper parts of the cervix was a tense, smooth, elastic swelling, which extended to the right, filling up the right side of the pelvis, and causing bulging of the right fornix. *Per rectum* the retro-uterine portion of the swelling pressed considerably on the anterior rectal wall, and felt harder and more irregular than the main swelling.

Abdominal section (November 25th).—On reaching the peritoneal cavity and pushing aside the omentum, which was widely adherent to the contents of the pelvis, a large, tense, smooth, globular swelling was seen pushing the right broad ligament forwards and outwards. The thickened Fallopian tube ran over the inner border of the anterior surface in a direction from before backwards, and a little outwards. The fimbriated end of the tube was lost in the wall of the tumour. The tumour was with great difficulty separated from its adhesions, and brought up to the surface. A narrow prolongation dipped down into Douglas's pouch, where the adhesions were very tough. During the separation a serous subperitoneal cyst, containing about an ounce of fluid, was ruptured, and, later, the tumour itself gave way, a quantity of ill-smelling, thick, yellow, blood-stained pus escaping, to the extent of about ten fluid ounces. The broad ligament was transfixed, tied, and divided, and the tumour removed. An adherent mass still remained in the deepest part of the pelvis. This was now separated and brought into view. It proved to be a coil of large intestine, with a firm, round, solid blood-clot so intimately adherent to it that it was thought unwise to remove it. An attempt to peel it away caused free oozing, which was restrained by a fine silk ligature. The blood-clot was broken up by the finger, and was found to contain a central cavity from which serum escaped.

The course of the left tube was followed with difficulty; it was eventually found thickened, with a diameter of about half an inch, closed at its fimbriated extremity, and adherent to the left wall of the pelvis just below the brim. It was ligatured and removed, and, on section, was seen to contain a few

drops of pus. The mucous membrane was but little altered except at the closed end, where there was a patch of yellow-coloured slough. The thickening was chiefly interstitial, the canal being little above the normal width.

The abdominal cavity was irrigated with hot boracic solution and sponged dry. A glass drainage-tube was inserted and the wound closed. The operation lasted two hours and ten minutes.

On examining the tumour it was found to be an inflamed ovarian cyst, with thick walls. When empty and allowed to lie on a flat surface its diameter measured 3 inches. The right Fallopian tube communicated directly with its interior by an opening half an inch in diameter, with smooth, well-defined margin. The tube itself was much thickened, its divided end measuring an inch in diameter. The portion removed measured $3\frac{3}{4}$ inches in length. The portion of the left tube removed measured $1\frac{1}{4}$ inches in length.

The patient was sick from time to time up to 5 a.m. on the 27th; the drainage-tube was removed at 6 a.m. the same day. The condition of the patient, notwithstanding the cessation of the vomiting, was unsatisfactory; there was increasing distension, and the pulse became flickering. An endeavour was made several times on the 28th to pass the rectal tube, but there was a large, rounded, hard, fixed mass pressing on the anterior wall, and completely obstructing the bowel. Next day, the condition being worse, it was decided to puncture the distended bowel. This was done without relief, and at 9 p.m. the resident assistant surgeon, Mr. Robinson, opened the abdomen in the left inguinal region, with the object of performing colotomy. The sigmoid flexure, however, was collapsed and intensely adherent; an opening was, therefore, made in what was believed to be the small intestine, with relief to the distension. The pulse became imperceptible during the operation, but improved when the opening was made. The patient, however, gradually sank, and died at 5.30 a.m. on the 29th. No fæces had passed through the intestinal wound.

				Temp.		Pulse.	Resp.	
Before operation, Nov. 23	...	8.30 p.m.	...	102°	...	—	...	—
		Midnight	...	101.2	...	—	...	—

			Temp.		Pulse.		Resp.
Before operation, Nov. 24	...	8 a.m.	...	99·4°	...	—	—
		8 p.m.	...	102	...	—	—
25	...	4 a.m.	...	99	...	—	—
		8 a.m.	...	98·4	...	—	—
After operation		6 p.m.	...	97	...	118	40
		8 p.m.	...	97	...	120	40
		Midnight	...	99·4	...	140	36
26	...	4 a.m.	...	98·4	...	134	30
		8 a.m.	...	99	...	130	34
		Noon	...	99·2	...	136	30
		4 p.m.	...	99	...	140	24
		8 p.m.	...	99·8	...	132	24
		Midnight	...	99	...	132	24
27	...	4 a.m.	...	98·4	...	130	22
		8 a.m.	...	98·8	...	,,	24
		2 p.m.	...	98·8	...	,,	24
		4 p.m.	...	98·6	...	,,	18
		8 p.m.	...	98·6	...	140	20
		Midnight	...	98	...	,,	,,
28	...	4 a.m.	...	99	...	,,	,,
		8 a.m.	...	99·4	...	,,	,,
		Noon	...	98·4	...	,,	,,
		4 p.m.	...	97·8	...	144	32
		8 p.m.	...	98	...	148	40
After second operation			...99 to 100·4				

Autopsy.—General peritonitis. The portion of intestine opened was the first part of the transverse colon displaced. The last few inches of the ileum and the cæcum had fallen into the pelvis, and were intensely hyperæmic. The large intestine was collapsed, the small distended. The peritoneal covering of the upper part of the rectum was very ragged and uneven. An old blood-clot with central cavity torn open was found in the wall of the rectum, too closely incorporated with it to have allowed of its being removed. A little grumous blood-stained fluid lay behind the uterus, which remained in its normal position. The ligatures were all secure. On laying open the intestine the inner surface was found healthy, and quite free from localised hyperæmia. There had evidently been no constriction sufficient to damage the mucous coat of the bowel.

CASE 3. *Suppurating tubo-ovarian cyst of right side; tube greatly enlarged; aperture of communication size of large*

goose-quill; abdominal section; removal of cyst, &c., also of left tube and ovary, the latter on account of hæmorrhage from fibroid disease of uterus; recovery (from notes by H. B. Osburn).—R. H—, æt. 54, married, residing at Wandsworth, admitted November 22nd, 1889.

The catamenia commenced at seventeen, preceded by pain, which ceased with commencement of flow. Married at twenty. First child at forty; labour at term, difficult; recovery normal; child stillborn. Menstruation regular up to twelve months ago; since then has had irregular hæmorrhages, lasting from three to five weeks. For the past five weeks the loss has been continuous and profuse.

Has had no previous illness.

Six weeks ago began to have a dull pain in lower abdomen; has never been aware of any abdominal swelling. For eight weeks has had swelling of the legs and feet.

On admission.—Patient a spare woman, extremely blanched. Soft systolic bruit over aortic area. Chest sounds otherwise normal.

Abdomen presents a rounded, irregular prominence in hypogastric region, extending more to left than right. A tumour, firm, smooth, and lobulated, is felt above pubes, rising on the left side to the level of the umbilicus, and in the middle line to an inch below that level, sloping downwards towards the right. In the right iliac region the mass is less firm and more moveable. Two inches above the ramus of the os pubis, a band, moveable and elastic, can be felt running transversely outwards to the lateral wall of the pelvis, in front of the tumour on the right side. Dulness on percussion over the tumour, commencing in the middle line 2 inches below the umbilicus, rising a little higher on the left, and curving downwards on the right to the centre of Poupart's ligament, where it becomes ill-defined. Uterine sound passes 4 inches. The firm tumour on the left proves to be the enlarged uterus; the softer tumour on the right is separated from the uterus by a sulcus; it lies behind the right broad ligament, which is pushed forwards and put on the stretch. The band, above described as crossing in front of it, is the upper border of the broad ligament with the Fallopian tube.

Temperature from admission to December 4th, 97·8° to

100·6°; usually normal in the morning, and 99·8° to 100·4° in the evening.

Diagnosis.—Fibroid enlargement of uterus; uterus displaced to left by an ovarian cyst situated behind the right broad ligament.

Abdominal section (December 5th).—On opening the peritoneal cavity, the right tube was seen to be greatly and irregularly distended, passing first outwards and backwards, and then dipping deeply down to the bottom of the retro-uterine pouch, where it was densely adherent. Several thin-walled subperitoneal serous cysts behind the uterus and broad ligament came into view during the separation of the tube. A quantity of thin, offensive, blood-stained pus also welled up. On bringing the adherent mass into view, it was seen to be composed of a small suppurating cyst of the right ovary and the right tube. Both had given way during the manipulations, and both contained foul blood-stained pus, similar to that which had been welling up during the operation. The parts were removed by transfixion, ligature, and division of the broad ligament. The left ovary and tube—the former spherical and cystic, the latter normal—were removed in a similar manner. Peritoneal cavity was irrigated with hot boracic solution, and a drainage-tube was inserted behind and to the right of the enlarged uterus, which filled the greater part of the pelvis. The operation lasted one hour and ten minutes.

Description of parts removed.—From the right side an ovarian cyst and the Fallopian tube, both containing offensive purulent fluid of precisely the same appearance, odour, and general character. The tube is irregularly distended, its greatest diameter (before being opened) $1\frac{1}{4}$ inches. Length of portion removed $6\frac{1}{2}$ inches; canal patent throughout; calibre normal at uterine end, widely dilated at outer end. No trace of fimbriæ; walls of tube continuous with those of the cyst, into which the tube opens by an aperture the size of a large goose-quill. Cyst irregular and thick-walled, measuring 3 inches $\times$ $3\frac{1}{2}$ inches, the wall in places measuring $\frac{1}{3}$ inch in thickness. Several loculi in the cyst, separated by incomplete septa of cartilaginous hardness. In the wall several smaller cysts, containing clear fluid.

From the left side, ovary, Fallopian tube, and portion of

broad ligament. Ovary tense and fluctuating, $1\frac{1}{4}$ inches $\times$ $\frac{3}{4}$ inch, seen, on section, to be composed of a number of small cysts with incomplete septa. Length of tube removed $2\frac{3}{4}$ inches. Fimbriæ normal; canal patent; wall contains a varicose and sacculated vein. Portion of broad ligament displaying well the organ of Rosenmüller.

December 6th.—Patient has recovered well. No vomiting. Drainage-tube removed and last stitch tied 5 p.m. (third dressing).

8th.—No distension; passed urine and flatus naturally. No pain; tongue a little dry.

13th.—Sutures all removed. Highest temperature since operation 100° .

17th.—Wound closed; two of the suture tracks suppurated slightly on the 15th, now healed. No induration. Uterus now occupies middle line. Patient is well, cheerful, and free from pain. Loud systolic murmur to left of lower part of sternum.

19th.—Temperature slightly raised during last three or four days: *e. g.* on the 15th, 99.8° to 102° ; on the 16th, 100.8° to 101.8° ; on the 17th, 100.2° to 101.4° ; on the 18th, 100.4° to 101.4° ; and on the 19th, 99° to 101° .

24th.—Temperature normal since the 20th. Much better; to sit up to-day.

31st.—Left the hospital convalescent.

SPECIAL TABLE III.—Cases of Abdominal Section other than Ovariotomies and Tubo-ovarian Cysts.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Object of operation.	Condition found.	Nature of operation.	Result of operation.	Remarks.
1	G. C.	Barking	32	M.	1889 Feb. 21	Exploratory; retro-uterine tumour	Two encysted intra-peritoneal hæmatocœles, each grasped by the expanded fimbriæ of a Fallopian tube	Enucleated and removed	D. 9th day	P.M.—Acute nephritis; no cause of death discovered in parts concerned in operation. See Abstract.
2	E. H.	Lambeth	35	W.	Mar. 26	Exploratory; suspected abscess in chronic peritonitis	Very considerable matting of intestine, &c.; no pus found	Simple exploration	R.	Died 5 months later, after leaving hospital.
3	N. B.	"	33	M.	June 27	Intra-peritoneal hæmatocœle; right hæmatosalpinx	30 fl. oz.; dark soft clot encysted in retro-uterine pouch of peritoneum; right tube distended by clot, open at fimbriated extremity	Right tube removed; site of hæmatocœle cleansed and drained	R.	See Abstract, also 'Trans. Obst. Soc. Lond.,' 1889, p. 226.
4	A. M.	Newington	39	M.	Aug. 2	Exploratory; retro-uterine tumour	Hard tumour beneath post-parietal peritoneum, fixed and connected with posterior part of uterus; thought to be burrowing fibroid	Simple exploration	R.	After the operation it transpired that there had been an occasional discharge of pus from rectum since May, 1888; abdomen, therefore, was reopened.
5	"	"	"	"	Aug. 30	Retro-peritoneal abscess	"	Puncture; removal of 1½ fl. oz. pus; opening enlarged; edges secured to abdominal wall; irrigation; drainage	R.	Temperature uniformly normal

OL. XIX.	7	E. L.	Brompton	45	M.	Aug. 29	Exploratory ; intestinal obstruction 4 months after ovariectomy	Firm adhesion of pedicle to sigmoid flexure	2 pints turbid serum removed from peritoneal cavity ; drainage	At P.M. obstruction found to be due to chronic peritonitis, affecting chiefly upper part of small bowel. See Abstract. Exhaustion	temperature normal for 2 weeks, then for 3 days from 98.6° to 100.2° ; afterwards normal.
	8	E. W.	Buckden, Hunts	59	M.	Sept. 5	Exploratory ; ascites with tumours suspected to be malignant	Malignant growth involving ovum, ovary, and general peritoneum	As much of the growth as possible and ascitic fluid removed	D. 38 hrs.	
	9	A. O.	Waterloo Road	28	M.	Sept. 14	Pyosalpinx (gonorrhœal)	Pyosalpinx (left) ; chronic pelvic peritonitis ; small suppurating hæmatocele at orifice of each tube	Removal of left tube, &c.	R.	Acute pneumonia during convalescence. Health greatly improved by operation (see 'Brit. Med. Journ.,' Dec. 27, 1890, p. 1472). See Abstract, also 'Trans. Obst. Soc. Lond.,' 1889, p. 257.
	10	A. D.	Lambeth	26	M.	Sept. 17	Intra-peritoneal hæmatocele with hæmato-salpinx	7 fl. oz. ; dark soft clot encysted in retro-uterine pouch of peritoneum ; right Fallopian tube distended in outer half by firm clot ; ruptured varicose vein on inner surface of tube	Tube removed ; site of hæmatocele cleansed and drained	R.	
12	11	M. M.	Okehampton	44	M.	Oct. 3	Removal of both tubes and both ovaries for uterine fibroids	Large uterine fibroid ; tubes and ovaries normal	Ovaries and tubes removed	R.	Hæmorrhage arrested by operation.

Name.	Residence.	Civil condi- tion.	Date of operation.	Object of operation.	Condition found.	Nature of operation.	Result of operation.	Remarks.
12 S. A.	Borough	45 M.	Oct. 10	Large abscess in left iliac fossa discharging <i>per</i> <i>rectum</i>	Large retro-peritoneal abscess	16 fl. oz. pus removed by trocar; opening enlarged; stitched to abdominal incision; irrigated and drained Right tube removed	R.	Feb. 18, 1890, health good; no tumour; sinus still discharging pus.
13 S. B.	London	22 M.?	Oct. 17	Pyosalpinx (gonorrhoeal)	Right tube occluded, filled with pus, and adherent behind uterus. Left tube apparently normal		R.	Temp. uniformly normal.
14 L. B.	Turner's Hill	34 S.	Oct. 24	Disease of right Fallopian tube	Right tube enlarged and adherent. Small cystic adenoma; right ovary prolapsed and firmly adhe- rent	Tube and ovary removed	D. 48 hrs.	P.M.—Pus found in uterus and in left tube, which ap- peared normal exte- rnally.
15 A. H.	Clapham	27 M.	Nov. 28	Both tubes diseased and adherent	Left tube inflamed and adherent to abdominal wall; right inflamed and adherent behind uterus. Ovaries adherent; otherwise healthy	Tubes and ovaries removed	R.	March 1, 1890, health completely restored (see 'Brit. Med. Journ.,' Dec. 27, 1890, p. 1471).

CASE 1. *Hæmorrhage from both Fallopian tubes, forming intra-peritoneal hæmatocele on each side of the pelvis, encysted amongst old pelvic adhesions and embraced by the expanded fimbriæ of the tubes; abdominal section; removal of both tubes and blood-clots; death on ninth day from acute nephritis; autopsy* (from notes by W. H. L. Copeland).—G. C—, æt. 32, married, residing at Barking, admitted February 9th, 1889; died March 1st, 1889.

Menstruated once at age of sixteen, and not again until eighteen months later, from which time the catamenia were regular and painless. Married at twenty-two; four children, last two years seven months ago. Recovered well after each confinement. In September, 1887 (eighteen months ago), a miscarriage occurred at the second month, after which patient was ill for eight weeks, hæmorrhage taking place all the time. There have been two early miscarriages since, the last on December 1st, 1888 (twelve weeks ago). The patient left her bed in two days, but had more or less hæmorrhage until the end of the month. After it had ceased for a day or two, what appeared to be an ordinary menstrual flow occurred, lasting two or three days. On February 6th a thin, brownish-coloured discharge took place. The patient has not been well from the time of the miscarriage. During the last month she has suffered from pain in the right iliac region, across the bottom of the back, and down the right thigh. For the past fortnight there has been pain on micturition and defæcation.

On admission.—Patient is a cheerful, healthy-looking woman. There is nothing abnormal to be detected in the abdomen.

On vaginal examination uterus is found normally ante-flexed, situated slightly to the left, of normal length, and freely moveable independently of a swelling felt behind it and to the right. The swelling is smooth, firm, elastic, and immoveable, occupying right side of posterior part of pelvis, and extending an inch to the left of the middle line. The left fornix is narrow, and, high up, there can be felt an obscure swelling, tender on pressure.

Temperature varies from 98° to 99·2°.

Abdominal section (February 21st, 1889).—Incision 3 inches long, in middle line. On passing hand into pelvis the retro-uterine pouch was felt to be filled with a rounded solid tumour,

rently continuous with the right Fallopian tube, extending outwards to the right side as far as the pelvic wall. From the outer side of the swelling the tube curved forwards and inwards to the right cornu of the uterus. The mass was fixed by extremely firm adhesions to rectum and pelvic walls. On the left side a similar but much smaller mass was situated behind the left broad ligament. The uterus was free and fairly moveable. With the exception of the rectum, the intestines were not involved. It was evident there had been old pelvic peritonitis, and that amongst the matted tissues were two solid tumours, one on each side, that on the right being the larger. The masses were with extreme difficulty separated by the fingers. The larger tumour was first brought into view. It consisted of a firm blood-clot, equal in size to a hen's egg, and of a more or less globular shape, and was embraced by the expanded fimbriæ of the right tube. The tube itself was thickened, empty and undilated, and was bent backwards upon itself. The broad ligament on the same side was also much thickened. The ovary was not seen. The tube was removed with the tumour. There was now to be felt a cyst behind the outer part of the right broad ligament; during enucleation it was ruptured. The collapsed sac had all the appearance of a simple serous cyst of the broad ligament or ovary. There was a thin, friable pedicle, the cyst for the most part being shelled out without difficulty. During these manipulations something was felt to give way, and the finger passed through an opening into a cavity in the lower part of the pelvis. The adhesions in Douglas's pouch were so dense that it was feared the rectum had been torn. The assistant was therefore requested to examine the rectum from below; he found it uninjured.

The smaller mass was now dealt with. It, too, consisted of a solid blood-clot, laminated and partly decolourised. Like its fellow, it was embraced by the fimbriæ of the left tube. The ovary, white, scarred, and shrivelled, was firmly adherent to the pelvic wall, and was not removed. The tube was removed with the blood-clot.

The pelvis was now cleansed with sponges. Its floor was felt to be covered with adherent shreds. A glass drainage-tube was inserted and the abdominal incision closed.

The operation occupied two hours. After the operation the patient was much collapsed and in great pain. Next day she looked very ill, and the pulse was 156. At 4 p.m. she vomited for the first time. In the evening she asked for the chaplain, and bade her friends good-bye. Champagne was given freely. At 11 a.m. on the 23rd her colour was better; there was no distension or pain. The urine, loaded with lithates, was found to contain a trace of albumen. The drainage-tube was removed in the evening. During the night she vomited several times. The vomiting continued during the 24th, the vomited matter being of an intensely dark green colour. Nutrient suppositories were ordered, only ice to be given by the mouth. On the 26th there had been no vomiting since 12.30 p.m. on the 25th. The breath had a faint sweet odour. Nutrient enemata and suppositories were administered, and brandy and milk by the mouth. Some diarrhoea, checked by morphia suppository. On the 27th had been again sick in the night. Very restless, pulse scarcely perceptible. On the 28th patient was very weak, with hollow voice. No distension; sickness less marked; several scanty offensive motions. March 1st sickness returned. Urine scanty, smoky, highly albuminous. Patient refused nourishment and gradually sank. Death took place at 11.30 p.m.

Except on the day following the operation the temperature had been uniformly below 100° ; during the last twenty-four hours it was frequently subnormal.

Autopsy.—Some hypostatic congestion of lungs. Kidneys intensely hyperæmic, blood oozing freely on section; cortical substance swollen. On removing capsule, surface presented a granular appearance in parts, suggesting interstitial change; organs generally showed evidence of acute nephritis. Bladder and ureters were normal and uninjured.

Retro-uterine pouch occupied by two feet of small intestine, which had contracted slight adhesions. On removing them the pouch was seen to be lined with a thin layer of firm, stratified blood-coagulum, one sixth to one eighth of an inch in thickness, in the midst of which were two or three small collections of serum. No fluid blood; no pus; no general peritonitis; no serous effusion; no obstruction or strangulation of bowel; no visceral injury. Left ovary shrivelled and adherent.

Right ovary not seen. Posterior aspect of right broad ligament denuded of peritoneum over a patch an inch in diameter. No sign of hæmorrhage from pedicles. Uterus normal, except that its posterior surface was ecchymosed and covered with shreds of adherent membrane. Mucous membrane of rectum deeply injected over whole circumference at a distance of five or six inches from anus.

The cause of death appears to have been acute nephritis. The parts concerned in the operation seemed as healthy as could be desired (G. Gulliver).

CASE 3. Recurring intra-peritoneal hæmorrhage, preceded by slight hæmorrhage per vaginam lasting five weeks; no history of previous menstrual irregularity; abdominal section; thirty fluid ounces of blood encysted in peritoneal cavity; right Fallopian tube distended with firm blood-clot; free end of tube widely open, with dark soft clots protruding from it; tube removed; blood cleared out; no trace of ovum discovered; recovery (from notes by S. G. Toller).—N. B—, æt. 33, married, residing Westminster Bridge Road, admitted June 8th; discharged August 24th, 1889.

Until two years ago patient was a professional cyclist. First menstruated at age of sixteen; flow always scanty and irregular, never painful. Married at sixteen years and three months. Four children, one miscarriage. Last child born nine years ago; recovered well, being up and about the house in a fortnight; a few days later went out and got her feet wet; attacked in consequence with severe abdominal pain, for which she was confined to bed for two weeks, and had poultices applied. Has never felt quite as strong since. During last twelve months says she has lost her appetite and not felt well. Up to present illness the monthly periods had occurred regularly.

For six weeks previously to admission had continuous uterine hæmorrhage with occasional passing of clots. Between 5 and 6 o'clock on the morning of June 3rd patient awoke with severe pain in the abdomen and a sensation of bearing down, with urgent desire to relieve both the bowels and bladder. She felt very faint and ill, and awoke her husband, who, being alarmed, called in some neighbours. Presently vomit-

ing took place, and she continued so sick and looked so pale and ill that they were afraid to move her. She remained sitting in a chair until 10 o'clock, when a little brandy was administered, and she was assisted into bed. She continued to be extremely pale and ill, and to have more or less pain in the lower part of the abdomen, with occasional vomiting up to the 7th June, when she had a similar attack to that already described, but less severe. Next day she passed a "whitish lump" *per vaginam*, and the hæmorrhage, hitherto slight, became profuse. She was accordingly brought up to the hospital and was admitted.

On admission, a stout, muscular, well-developed woman; the surface of the body markedly anæmic. Temperature normal. Heart and lungs normal. Urine free from albumen. No unusual prominence of abdomen, but over an area extending from the pubes upwards to within an inch of the umbilicus there is an ill-defined mass, resistant and tender. *Per vaginam*, very slight hæmorrhage going on; no depression of fornices. Uterus normal in direction and length, fairly moveable, but the slightest movement of it causes pain; cervix normal, except for a hard nodule in the posterior lip of the os; corpus not definable bimanually; appears to be lost in the tender mass above the pubes.

June 13th.—Temperature since the day of admission has varied from 99° to 100°. To-day some pain and slight increase of hæmorrhage.

16th.—Suddenly seized between 5 a.m. and 6 a.m. with intense pain and some distension in the lower part of the abdomen, accompanied with vomiting and alarming pallor. Temp. 99·6°; pulse thready.

17th.—Less pain and distension; vomiting less frequent. Patient extremely blanched and very weak. Temp. 100°; pulse 100.

18th.—No vomiting; a little distension and tenderness of lower part of abdomen, chiefly on right side, with bearing-down pain. Temp. 98·6° to 100°. *Per vaginam*, a semi-solid tongue-shaped mass in Douglas's pouch.

19th.—Temperature rose from 100° at midnight to 101·4° at 4 a.m., 102·4° at 9 a.m., 101° at noon, 101·4° at 8 p.m. Condition otherwise unchanged.

20th to 23rd.—Temperature varied from 99° to 100·2°, patient looking and feeling much better.

24th.—Between 5 a.m and 6 a.m. patient had another severe and sudden attack of pain and swelling in the lower part of the abdomen, accompanied with excessive pallor and vomiting, but with no rise of temperature. The attack seemed to be brought on by emotional excitement, due to a tragedy in a neighbouring music hall, late on the previous evening, the principal victim of which was a person known to the patient. The occurrence became known in the ward during the night, the murdered man having been brought into the hospital, and much excitement prevailing both inside and outside the hospital.

25th.—Better, but still very ill. No vomiting since yesterday morning. Temp. 99·4° to 100·4°. Tenderness and resistance most marked on the left side, not on the right as heretofore. [The operation of abdominal section had been contemplated on the occasion of the previous attack, but the patient rallied so quickly that it was postponed. The occurrence of a fourth attack, however, reopened the question; the consent of herself and her husband, therefore, having been obtained, it was decided to perform the operation on the 27th.] It was evident that the patient, whose condition was almost certainly due to repeated intra-peritoneal hæmorrhages, was in constant danger of the hæmorrhage recurring.

27th.—Patient much better; pain less; anæmia less extreme. Temp. 99·4°. [The opinion was expressed that the case would prove to be one of intra-peritoneal hæmatocele, probably complicated with and originating in a hæmato-salpinx.]

Abdominal section (2 p.m.).—Abdominal wall loaded with fat. On reaching parietal peritoneum and making a small opening in it some dark fluid blood immediately welled up. The peritoneal incision was now made of equal length with the external wound. The omentum was exposed by the upper inch of the incision; the lower part opened directly into a cyst-like cavity, shut off from the upper part of the peritoneal cavity by a wall, consisting of firm blood-clot and omentum; and containing blood, partly liquid and partly in the form of soft dark clot, to the extent of 30 fl. oz. After removing some of the blood the uterus was felt, of normal size, to the left of

the middle line, and tilted with its left border forwards. The left ovary and tube were adherent to the abdominal wall, and were apparently normal. They were not disturbed. Passing upwards and outwards from the right cornu of the uterus was a tumour, 3 inches by 2 inches, covered with a thick layer of firm, dark blood-clot. The tumour proved to be the right tube, distended evenly by a dark, firm blood-clot, and with its fimbriated end wide open, the margin being everted and folded back upon the exterior surface of the tube. A soft clot was hanging from the open mouth of tube. The tumour was carefully separated from its adhesions and its pedicle of broad ligament transfixed, tied in two portions, and divided. Some free bleeding occurred from the point of transfixion, but ceased when the ligatures were tied. The uterine end of the tube was of normal size and empty. The ovary was not seen.¹ The cavity of the hæmatocele was washed out with two gallons of hot boracic solution; its walls were lined with firm clot, which hung here and there in shreds. A long glass drainage-tube was inserted, and the abdominal wound closed by sutures of silkworm gut.

The distended tube with its contents was, after removal, divided longitudinally by Mr. Shattock into two equal parts, one of which was reserved for preservation, while the other was carefully examined for any products of conception, or appreciable lesion of the inner surface of the tube. The result of the examination was entirely negative. The inner surface of the tube had lost its folds from distension, but was otherwise normal, and the contents consisted solely of firm laminated blood-clot.

The pads were changed night and morning until the morning of the 29th, when the drainage-tube was removed and the two loose stitches tied. The quantity of blood removed by pipette at the several dressings was six, five, and, on the last two occasions, four fluid drachms. There was some incontinence of urine after the operation, but on the following morning the patient passed it naturally. For the first two days there was occasional vomiting of mucus. On July

¹ The specimen was exhibited at the Obstetrical Society of London, and is described in the 'Transactions,' vol. xxxi, for 1889, p. 226. It is now in the museum of St. Thomas's Hospital.

1st the bowels acted after enema, and the patient was removed into the general ward. The only occasions on which the temperature exceeded $100\cdot4^{\circ}$ were at midnight on the 27th June ($100\cdot8^{\circ}$), at midnight the following day (101°), and at 4 a.m. on the 29th ($100\cdot8^{\circ}$).

July 4th.—Temperature in the morning normal. Patient better and stronger, pallor less marked. Some discharge of altered blood from the site of the drainage-tube. A few stitches removed.

5th.—Deep stitches removed. While straining at stool the lower angle of the wound opened, and a quantity of altered blood escaped. Temperature a.m. $98\cdot6^{\circ}$, p.m. $100\cdot8^{\circ}$.

7th.—Altered blood still escaping, together with a little pus, the latter apparently from the walls of the incision. The opening measured an inch in length and an inch in breadth at the surface; below, its diameter was a quarter of an inch.

8th.—Probe passes $4\frac{1}{2}$ inches; india-rubber drainage-tube inserted; remaining stitches removed.

13th.—Tube removed.

15th.—Very little discharge of thin altered blood without odour. Wound closing.

August 24th.—Left the hospital; wound nearly closed.

September 6th.—Small sinus; patient's condition excellent.

October 4th.—Patient reported that she had menstruated, for the first time since the operation, from September 18th to 23rd. On September 19th a figure-of-8 ligature was found on the dressings. There is still a small sinus discharging.

December 10th.—Another ligature was found to-day on the dressings. The sinus thereupon closed.

CASE 10. *Hæmorrhage into right Fallopian tube and into peritoneal cavity, forming a hæmato-salpinx and encysted intra-peritoneal hæmatocele, after menstruation had ceased for two months; abdominal section; ruptured cyst between right tube and ovary, with corpus luteum in a thickened portion of its wall; ruptured varicose vein on inner surface of tube; clot in outer end of tube; seven fluid ounces of soft clot encysted in retro-uterine pouch; removal of tube and cyst; no foetal remains discovered; prolonged suppuration; recovery (from the notes of*

E. E. Ware and A. C. Lankester).—A. D—, æt. 26, shirt-maker, residing in Lambeth, admitted August 29th, 1889; discharged November 9th, 1889.

Beganto menstruate at twelve, married at fifteen (November, 1878). Has had five children, two miscarriages. Last child fourteen months ago; weaned child at three months, then menstruated regularly until ten weeks before admission. She then missed two periods, and considered herself pregnant.

Three years ago she was admitted to Adelaide Ward suffering from hæmatocele immediately following a miscarriage. The following is an abstract of the notes of her case on that occasion:—"She was admitted on August 13th, 1886. Two weeks before admission, patient being then ten weeks pregnant, she received a severe shock from the sudden death of her youngest child. A week after this occurrence she was suddenly seized with severe pain in the lower part of the abdomen and the back, soon followed by severe hæmorrhage from the vagina. Next day, while at work, she suddenly aborted. There was no further hæmorrhage. She continued at her work for a week, when she was again suddenly seized with violent pain in the abdomen, back, and thighs. She became very faint, cold, and pale, shivered and vomited. On admission a few hours later she was pale and collapsed. Temperature on evening of admission 100° , afterwards normal, except on one occasion when it was 99° .

"On examination a soft swelling in lower abdomen, just above pubes; the swelling also felt behind uterus and in lateral fornices.

"Ten days later no pain, no swelling perceptible in lateral fornices or in abdomen. Swelling in Douglas's pouch, hard and solid. Sound passes in normal direction, but shows uterus slightly enlarged. Discharged August 24th."

After her last confinement, fourteen months ago, she kept her bed three weeks, owing to abdominal pain, from which she still suffered when she returned to her work.

Present illness commenced suddenly, when patient was walking out of doors, five weeks ago, with feeling of extreme illness and faintness, with loss of consciousness. She was laid on the ground until she recovered sufficiently to be able to sit up, when she was assisted home. There was no vomit-

ing. When she reached home she for the first time became aware, from the condition of her clothes, that a slight hæmorrhage was going on. This has been going on up to her admission. No clot, membrane, or other solid substance has been observed.

On admission the patient was pale, but otherwise in good condition. The uterus was anteflexed and empty. Above right lateral fornix and extending behind the uterus a continuous, smooth, oblong swelling, excessively tender. Uterus capable of being moved independently of the swelling. The diagnosis was right hæmato-salpinx.

No alteration having taken place after a fortnight's rest, abdominal section was proposed and acceded to. Temperature 98.4° to 99.4° .

Operation September 17th, 1889, 2 p.m. Retro-uterine space roofed in by adherent viscera (omentum, intestine, and uterus). On separating adhesions hand passed into a cavity filled with clot of the colour and consistence of currant jelly. This was removed by hand to the extent of seven fluid ounces. A small conical clot, of much firmer consistence, fell into Douglas's pouch during these manipulations. This was afterwards found to have dropped out of the expanded fimbriated end of the right Fallopian tube. The uterus was thick and large, and placed anteriorly. The right Fallopian tube was dilated and distorted, its fimbriated extremity open and continuous with what appeared like a ruptured cyst, the size of a Tangerine orange. In the wall of this cyst was a slight thickening at one spot, which the presence of a large and very well-marked corpus luteum showed to be a portion of the ovary. A portion of the tube measuring $3\frac{1}{2}$ inches in length was ligatured and removed. Its outer half was dilated and funnel-shaped, exactly fitting the conical clot already mentioned. The breadth of the tube when laid open was, at the narrower or inner end of the dilated portion $\frac{7}{8}$ inch, at the outer and wider end $2\frac{3}{8}$ inches. The length of the dilated portion was $1\frac{1}{2}$ inches. The conical clot that had dropped out of the tube was black, and firm on section, with an outer layer of firmer and browner clot. Its narrow end was uncovered with this brown layer, and was black like the inner portion, with a central canal large enough to admit a pin, as though a fine stream had

penetrated it. The undilated portion of the tube contained a thread of coagulated blood. On the inner surface of the dilated tube was a circular opening, $\frac{1}{3}$ inch in diameter, with a raised edge of mucous membrane, and lined with adherent blood-clot. On careful dissection this was found to be a small cavity beneath a raised portion of mucous membrane, into which a varicose vein had ruptured, and which in its turn had ruptured into the lumen of the tube. There was a similar but somewhat smaller and older lesion on another part of the inner wall of the tube, leading to a small cavity with blood-stained walls. No vessel could be traced in connection with this cavity. It appeared probable that this might be of similar origin with the more recent lesion, the ruptured vein having become occluded, and that it bore the same relation to the retro-uterine hæmatocele for which the patient had been in the hospital three years ago, as the more recently ruptured vein did to the present attack. The clots removed contained no trace of ovum. The left Fallopian tube passed in the direction of the left lateral wall of the pelvis, and could not be traced. The cavity of the hæmatocele was irrigated with hot boracic solution, and then sponged. A glass drainage-tube was inserted, and the wound closed and dressed. The operation lasted an hour and a half.

Next day the tube was removed.

On the 19th the temperature, normal in the morning, rose in the evening to 101.2° , and there was slight distension with pain.

On the 21st the temperature was still high, 101° to 102.2° ; pulse 100 to 110. No tension around wound, but dulness and resistance for about two inches on each side. Bowels have acted. No sickness.

September 22nd.—Blush around wound; all the superficial sutures and most of the deep ones removed. A bead of pus appeared from track of lowest suture, and on pressure pus welled up. The lower part of the wound was thereupon opened, and about eight fluid ounces of thick, flaky, and inoffensive pus escaped. An india-rubber drainage-tube introduced.

October 4th.—A free discharge of pus from the tube, slightly offensive, since the 26th September. Patient much more comfortable. Temperature, which had ranged from

99·8° to 102·4° from September 22nd to October 1st, on the 2nd varied from 99° to 101·4°; on the 3rd, 98·6° to 101°; and to-day from 98·4° to 100·6°.

11th.—After much straining the dressing was found stained with fæces. No distension or other bad symptom. Temperature, since 4th, 98° to 100·4°.

12th.—Pads changed every six hours since the occurrence of yesterday; no further fæcal stain. Pus plentiful and in-odorous.

20th.—Two or three times since last note a stain of fæces on dressings; none since 18th. Yesterday for first time appetite returned. In the evening tube was removed; discharge slight.

29th.—Wound nearly healed; permitted to get up. No hæmorrhage since operation.

November 9th.—Examination *per vaginam*. Uterus free, normal. Nothing to be felt on right side. Thickening on left; no tenderness. Discharged well.

January 28th, 1890.—Readmitted suffering from influenza—otherwise well.¹

Hæmorrhage into the Fallopian tube from rupture of a varicose vein on its inner surface being an extremely rare occurrence, the following note, referring to the case of Miss Neilson, the celebrated actress, will be read with interest. The account appears in the 'Boston Medical and Surgical Journal,' September 23rd, 1880, having been copied from a letter addressed to the editor of the London 'Times,' and signed W. E. Johnston.

Miss Neilson was attacked with severe pain in the abdomen at 3 p.m. in the Bois de Boulogne, Paris. At 3 a.m. the following day, during a most violent recurrence of the pain, she suddenly ceased to complain, went into a state of syncope, and died. Brouardel made a post-mortem examination, and found that she had ruptured a varicose vein in her left Fallopian tube, and had died from internal hæmorrhage. Two and a half quarts of blood were found in the peritoneal cavity; the ruptured vein presented an orifice of 4—5 mm. in diameter.

¹ The specimen was exhibited at the Obstetrical Society of London, and is described in the 'Transactions,' vol. xxxi, for 1889, p. 257.

HYPERTROPHIC ELONGATION OF CERVIX UTERI WITH LACERATED PERINEUM ; SUPRA-VAGINAL AMPUTATION OF CERVIX ; REPAIR OF PERINEUM.

(From notes by E. A. Roberts.)

G. L—, æt. 43, married, residing at Greenwich, admitted October 23rd, 1888 ; discharged January 9th, 1889. Seven children, no miscarriages. Perinæum lacerated at first confinement, thirteen years ago ; rupture complete. Has been in a condition of increasing discomfort for the last eight years from bearing down, and irritability of bladder and rectum. Many pessaries have been tried, but none could be retained.

On admission, cervix protrudes slightly beyond the vulva. Sound passes 4 inches ; constriction, marking upper boundary of cervix, $2\frac{1}{2}$ inches from os externum ; length of cavity of corpus uteri $1\frac{1}{2}$ inches ; fundus uteri $2\frac{3}{4}$ inches above pubes. Distance of posterior fornix from vaginal orifice $2\frac{1}{8}$ inches, of anterior fornix $1\frac{1}{2}$ inches. Bladder sound shows that bladder is drawn down by the cervix to within $\frac{1}{4}$ inch of os externum. A pouch of peritoneum has descended with posterior wall of cervix to within $\frac{3}{4}$ inch of os externum.

November 8th, 1888, supra-vaginal amputation of cervix. Portion removed $1\frac{3}{4}$ inches in length. After dissecting up the tissues in front and behind, the cervix was divided into two flaps by lateral incisions, each flap being removed separately. Small wound made accidentally in posterior pouch of peritoneum was closed by means of three catgut sutures. Lowest segment of connective tissue on each side secured by ligature before division. After removal of cervix, the mucous membrane of cervix was united to that of the vagina by two silkworm gut sutures in front and two behind. Vaginal wound on each side closed by two additional sutures. The ends of the sutures were left long. An iodoform tampon was placed in the vagina for eighteen hours. Catheter was used for two days, after which the bladder was emptied voluntarily. On fifth day a dose of house mixture was given. Patient became ill, nausea supervened, and temperature rose to $103\cdot4^{\circ}$.

Next day, bowels having acted, temperature had fallen to 100.4° . The sutures were all removed, except those in the lateral connective tissue, on the 14th day. Three days later the remaining sutures were cut away. The parts had healed.

December 3rd, 1888, operation for repair of perinæum. Thick flap dissected up from posterior vaginal wall, turned forwards into vagina, doubled upon itself, and secured by stitch as in quilting. Four deep and several superficial perinæal sutures of silkworm gut. Perfect union took place. Patient was able to pass urine voluntarily for first time on the sixth day; the bowels were relieved on the eighth day, and the sutures were all removed on the tenth day.

At time of discharge patient had complete control over bowel, with good sphincter. The distance from anterior border of perinæum to anus was $1\frac{3}{4}$ inches, and to the meatus urinarius $\frac{1}{2}$ inch. Uterus in normal position; length of canal $2\frac{1}{2}$ inches.

FORTY-ONE FATAL CASES
OF
ACUTE INFECTIVE OSTEO-MYELITIS,
TERMINATING WITH PYÆMIC SYMPTOMS,
CONTRASTED WITH TWO HUNDRED CASES OF
ORDINARY PYÆMIA.

BY G. H. MAKINS, F.R.C.S., AND F. C. ABBOTT, B.S.

DURING the years 1872—1888 inclusive, forty-one cases of acute infective bone mischief under treatment in the hospital have terminated fatally with signs of pyæmic infection.

These cases are tabulated in the present report, with a view to drawing and supporting certain deductions as to the etiology and morbid anatomy of the disease; and in order to emphasize its special characteristics a comparison is made between the whole number of cases and 200 cases of ordinary pyæmia from general causes.

The name acute osteo-myelitis is prefixed to the paper as in the opinion of the compilers most nearly corresponding to the morbid anatomical characters of the disease. There is no doubt that in some cases the periosteum is the part primarily affected, but in these inflammation always extends to some appreciable depth into the bone, hence to designate such as osteo-myelitis can scarcely be termed a misnomer, while

in the large majority it certainly correctly describes the condition, and is highly preferable to the name acute necrosis sometimes adopted.

It will be noted that in the table one case is included in which the age exceeds that at which the disease is ordinarily met with. Since, however, the course and symptoms in this closely resembled that noted in the others, and that the authority of Billroth and König can be cited in support of the occurrence of an identical condition in adult life, it is considered together with the whole number.

TABLE I.—*Forty-one Cases of Acute Infective Osteo-myelitis.*

No.	Bone primarily affected.	Sex.	Age.	Date of occurrence.	Trauma.	Date of occurrence of first symptom of pyæmia.	Subsequent duration of disease.	Secondary deposits.		Primary affection of joint.	Re-sult.	Incision or amputation.	Remarks.
								External.	Internal.				
1	Humerus, upper epiph.	M.	5½	1872 Jan.	? Vaccination	?	16 days	Knee, shoulder	—	Shoulder	D.	Incisions	—
2	Femur, upper epiph.	—	1	1874 Mar.	—	?	?	—	Liver	—	D.	Incision	Arose during a long stay in hospital. Jaundice. No P.M.
3	Femur	M.	11	Nov.	Yes	7th day	7 days	Sterno-clavic. joint (L.), areolar tissue	Liver?	—	D.	Incisions	—
4	Femur	M.	16	—	—	?	6 days	—	Myocardium, lungs	—	D.	—	—
5	Tibia	M.	7	1875 Nov.	Yes	7th day	30 days	Knee, areolar tissue	—	? Knee	D.	Incision, amputation	No P.M.
6	Femur	F.	38	1876 Feb.	—	6th day	8 days	Areolar tissue, neck, and forearm	—	—	D.	Incisions	No P.M. Apparently acute periostitis of femur.
7	Tibia	F.	15	1877 Feb.	Yes	5th day	3 days	Humerus, R. brach. art. thrombosed	Myocardium, kidney, lung	—	D.	Incisions	—
8	Femur, lower end	M.	14	1878 Jan.	Yes	8th day	18 days	L. shoulder, ankle, areolar tissue	Lung, pleura, pericardium, spleen	—	D.	Incisions	—

No.	Bone primarily affected.	Sex.	Age.	Date of occurrence.	Trauma.	Date of occurrence of first symptom of pyæmia.	Subsequent duration of disease.	Secondary deposits.		Primary affection of joint.	Re-sult.	Incision or amputation.	Remarks.
								External.	Internal.				
9	Ulna	M.	19	1878 Feb.	Yes	10th day	4 days	Elbow and shoulder, areolar tissue, thrombosis veins of forearm	—	? Elbow	D.	—	—
10	Femur, lower end	M.	2	1879 May	Yes	3rd day	6 days	—	Lungs	—	D.	Incisions	—
11	Tibia	F.	10	Jan.	Yes	2nd day	1 day	Areolar tissue	Spleen, myocardium, liver, intestines, kidneys, brain	—	D.	—	Pustular eruption, trunk, limbs.
12	Humerus, upper end	F.	15	Dec.	None known	4th day	2 days	Elbow	Pericardium	Shoulder	D.	Excision	—
13	Tibia, R.	F.	13	1880 June	None known	3rd day	3 days	Joints	Peri- and myocardium, lungs, kidneys	—	D.	—	Pustular eruption.
14	Femur, L., lower end	M.	12	1881 Jan.	Yes	3rd day	5 days	R. tibia, areolar tissue	Pericardium, lung, pleura, kidneys	Knee	D.	Osteotomy for drainage	—
15	Tibia, R.	M.	7	Feb.	None known	4th day	2 days	Thrombosis, saphena and femoral veins	Lung, pleura, heart, kidneys	—	D.	Incisions	—
16	Tibia, R., lower end	M.	18	1882 Feb.	Yes	2nd day	15 days	Knees, ankle, R.	Pericardium, pleura, lungs	R. ankle	D.	Incisions	—
17	Femur, lower end	M.	16	Sept.	Yes	2nd day	1 day	L. wrist, areolar tissue	Lungs	—	D.	Incision	—
18	Femur	M.	16	Nov.	—	? 5th day	9 days	L. hip, L. knee, L. shoulder, L. elbow, R. sterno-clavicular,	Lungs and kidneys	—	D.	Incision	Followed a whitlow.

19	Humerus, R., upper end	F. 10	Nov.	None known	7th day	38 days	scapula, L. humerus, femur, and ilium L. shoulder, R. sterno- clavicular joints	Pleura, peri- cardium, kidney	L. shoulder	D.	Incisions	—
20	Humerus	F. 2½	Nov.	None known	22nd day	1 day	Areolar tissue, thrombosis of subclavian vein	Pericardium	—	D.	Incisions	—
21	Tarsus	M. 6½	1883 Feb.	None	14th day	3 days	Areolar tissue	Pleura, kidneys, myocardium	Calc. cuboid joint	D.	—	Rupture of heart, sudden death.
22	Femur, L., upper end	F. 11	May	None	?	?	Areolar tissue, sterno- clavicular joints	Peri- and myocardium, pleura, kidney	Hip	D.	—	—
23	Tibia, L.	F. 8½	1884 Sept.	None	8th day	15 days	R. elbow, occipital bone, areolar tissue	—	—	D.	—	—
24	Humerus	F. 5½	Nov.	None	15th day	23 days	Areolar tissue, tibia	—	Shoulder	D.	—	? Suppuration umbilical vein.
25	Tibia, L.	F. 7	1885 May	None	?	6 days	—	Pericardium, lung, kidneys	—	D.	—	—
26	Femur, lower end	M. 14	July	Yes	2nd day	17 days	—	Pleura, pericardium, kidneys, meningitis	Syno- vitis, knee	D.	—	—
27	Femur, upper end	M. 11	Nov.	None	3rd day	5 days	Areolar tissue	Lung, kidney, Peri- and myocardium	Hip	D.	Excision	—
28	Tibia and fibula, L.	M. 5	1886 Feb.	None	7th day	26 days	L. ulna, L. humerus, areolar tissue	myocardium, kidney	—	D.	Amputa- tion	—
29	Femur, L.	F. 11	Aug.	Yes	3rd day	6 days	L. ankle	Lungs	—	D.	—	—
30	Acetabulum	M. 15	Nov.	Yes	3rd day	8 days	Areolar tissue	Lung, kidney	—	D.	—	Pustular eruption.

No.	Bone primarily affected.	Sex.	Age.	Date of occurrence.	Trauma.	Date of occurrence of first symptom of pyæmia.	Subsequent duration of disease.		Secondary deposits.		Primary affection of joint.	Re-sult.	Incision or amputation.	Remarks.
									External.	Internal.				
31	Tibia, L., upper end	M.	14	1887 Feb.	Yes	21st day	15 days		L. great toe, areolar tissue, vertebrae	Lungs	Knee	D.	—	—
32	Femur, L., upper end	M.	12	Aug.	Yes	4th day	6 days		—	Pleurae, lung, pericardium	Synovitis of hip	D.	—	Pustular eruption.
33	Femur, L., upper end	M.	1½	Dec.	None	6th week ?	7 weeks ?		Areolar tissue	Pericardium	Hip	D.	Incisions	—
34	Tibia, L., upper end	M.	9	1888 Feb.	None	5th day	12th day		Os calcis, R. sterno-clavic. and R. knee-joints	Lungs, kidney	—	D.	Incisions	—
35	Femur, lower end	F.	6	Mar.	Yes	2nd day	5 days		Parotid, bubo	Lung, kidney	—	D.	Incisions	—
36	Tibia, upper end	M.	14	April	Yes	3rd day	4 days		L. rib, 2nd	Peri- and myocardium, lung, kidney	Knee	D.	Incisions	—
37	Humerus, R., upper end	M.	5½	April	None	1st day	15 days		R. knee	Meningitis	Shoulder	D.	Aspiration	—
38	Tibia	M.	11	May	Yes	4th day	2 days		—	Kidney, myocardium	—	D.	Incisions	—
39	Femur, R., upper end	M.	4	—	None	21st day ?	28 days ?		—	—	Hip	D.	—	No P.M.
40	Femur, R., upper end	M.	6½	April	Yes	?	32 days		L. femur, upper end, R. shoulder-joint	—	—	D.	Incisions	No affection of hip-joints.
41	Femur, L., upper end	M.	9½	April	None	?	22 days		Discharge of pus from ears and nose	Broncho-pneumonia	Hip	D.	Incisions	Pustular eruption, face and back.

Before proceeding to the analysis of the individual points to be noted from the above Table it is necessary to point out the comparatively large number of these cases occurring in a period of seventeen years. When it is remembered that the table includes only the cases of acute infective bone mischief terminating with pyæmic symptoms, omitting all those in which the course led to recovery the statement of the chief English text-book of surgery,¹ that "acute infective osteo-myelitis is rarely met with in this country at any rate" is scarcely borne out. This is interesting when taken together with the fact that in Germany the low-lying plains around Berlin were considered by Lücke less liable to visitation by this disease than the mountainous districts, a remark which has been shown by König² to be discounted by the long list of sequestrotomies reported from the Berlin Clinics. The importance of the occurrence of this disease is obvious, since under present conditions it ensures the presence of an appreciable number of cases of pyæmia in the wards of any London hospital during the year, and cannot but affect the general hygienic condition of the wards. The care necessary in the disinfection of instruments used in these cases can scarcely be too strongly insisted upon, the operations in themselves being generally slight ones, in which instruments from a dresser's pocket-case are often employed. The drawing of any exact inference as to the frequency with which pyæmic symptoms are developed in these cases is unfortunately impracticable in this paper, since the disease as a distinct one has hardly been recognised for a long enough period. A glance at Table 1 shows the comparatively greater number of cases recorded in the later years, which there is no doubt depends not on the greater frequency of the disease, but rather on its certain recognition. As a result of this earlier want of knowledge, therefore, it is only in recent years that the cases have been properly separated from those of acute periostitis from other causes. Even in the recollection of the compilers the admission of patients into the hospital sent up as cases of "acute rheumatism," and also of recovered patients with displaced epiphyses as the result of so-called

¹ Erichsen, vol. ii, 9th ed., p. 268.

² 'Allg. Chir.,' p. 410.

“acute rheumatism” was not uncommon. An attempt will be made, however, in a future number of these reports to furnish particulars of the cases in which recovery followed which were under treatment during the same period.

Sex.—Analysis of the Table shows 27 of the patients to have been males, and 13 females, in 1 the sex is not stated. This proportion corresponds almost exactly with that noted in the 200 cases of ordinary pyæmia, where we find 133 males and 66 females.

Age.—In 40 cases (omitting the adult patient), the average age amounts to nine years, and when arranged in classes the following result is obtained :

Under 2 years.	2—5.	5—10.	10—15.	15—20.	+ 20.
8 ...	2 ...	12 ...	12 ...	6 ...	1

These numbers show a very large proportion of the cases to occur in the decade between five and fifteen years of age, the two next series being those below two and between fifteen and twenty.

Etiology.—The Table scarcely throws any fresh light on the primary pathological causation of the disease, in the few cases which were examined microscopically, pyogenic micrococci were the organisms detected, and no weighty inference can be drawn as to the mode of entrance of these into the system. In one case (No. 1) the development of the disease seemed undoubtedly to follow vaccination, a sequence before recorded by König in his experience at Göttingen. In No. 18 the disease developed during the course of treatment of a whitlow, and in No. 24 a suppuration at the umbilicus was progressing at the time of the first signs of bone mischief. Of the other 38 cases, in 19 history of a trauma usually of a slight nature is recorded, in 4 such was doubtful, and in 18 no primary cause could be assigned. The whole 38 were developed without any evidence of external breach of surface, and can only be explained on the working hypothesis that the organisms obtained entrance by the respiratory or digestive tracts. In relation to the selection of a *locus minoris resistentiæ* in the bones by the pyogenic organisms, it may be of interest to mention here a case occurring under the care of one of the compilers, although not

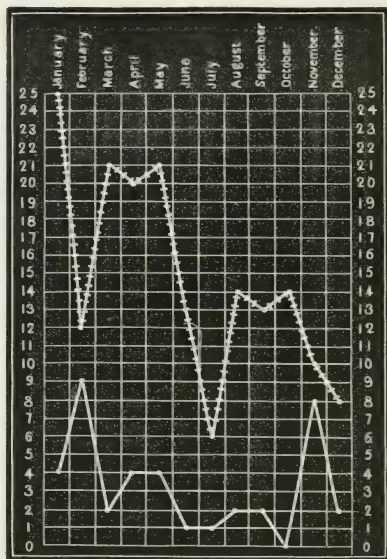
belonging to the class at present under consideration. A boy, aged five, with rickety distortion of both legs was subjected to an unilateral osteotomy, the wound progressing well locally, and without the occurrence of any constitutional symptoms whatever. A week later the second leg was operated upon, and on the second day suppuration was noted in the recent wound with constitutional symptoms, presumably due to infection during the operation. The first wound was then examined and found intact, but a few days later suppurated freely. Every care was taken with the dressing of the wound, and there seems no doubt that the suppuration resulted from the aggregation of pyogenic organisms originating in the second wound, being conveyed to the first by the circulation and there finding a suitable spot for multiplication. The boy ultimately made a good recovery after the removal of small sequestra from both tibiae.

The nature of the organisms uniformly found in these cases by other observers is a strong argument in favour of the view that pyæmia may be occasioned by more than one pyogenic organism, rather than any individual one pathogenetic to the disease.

The statement of Lücke that the disease is commonest in the spring and autumn, is not altogether borne out by the monthly occurrence of the cases under consideration (Chart). Thus of 40 cases, 16 occurred during the months of December, January, and February, 10 in the months of September, October, and November, 10 in March, April, and May, and 4, the smallest number, in June, July, and August. The numbers do, however, in some degree substantiate the assertion that the cold moist months are the most favourable to its development, since 9 occurred in February, and 8 in November, two months especially liable to be damp and cold in London.

An attempt has been made to establish a relation between the occurrence of acute infective osteo-myelitis followed by pyæmia, and ordinary pyæmia, with general meteorological conditions, such as was attempted in the report on pyæmia furnished by its committee to the Pathological Society of London.¹ For this purpose the weekly return of the

¹ 'Trans. Path. Soc. of London,' vol. xxx, 1879.



Curve showing proportional monthly frequency of occurrence of pyæmia and acute infective myelitis during the year.

Registrar-General of Deaths in London for the years 1882—1888 inclusive was employed. These were the only years available, as prior to 1882 pyæmia received no separate heading. The atmospheric temperature, barometric pressure, amount of moisture in the air and direction of the wind, were collated from this source, but unfortunately without attaining any positive result.

As shown in Chart, the 40 cases were analysed and placed in comparison with 175 cases of general pyæmia occurring within the same period either within the hospital or admitted from without into medical or surgical wards. In the cases of general pyæmia the three-monthly periods chosen show only a slightly divergent result from that obtained in the infective osteo-myelitis. Thus for the winter months (December, January, February,) we have general pyæmia 44, infective osteo-myelitis 16. Spring (March,

April, May,) general pyæmia 62, infective osteo-myelitis 10. For the summer (June, July, August), general pyæmia 32, infective osteo-myelitis 4. For the autumn (September, October, November), general pyæmia 37, infective osteo-myelitis 10. The large proportion of cases of general pyæmia in the winter and spring months as here classified, is very marked, but is distorted in the case of acute infective osteo-myelitis by the large number met with in November. The addition of November to the winter months, however (perhaps its proper place), would be to render the numbers very much more striking, thus for the seven months commencing in November and ending in May, we should have general pyæmia 116, acute infective osteo-myelitis 34, and for the five months commencing in June and terminating in October, general pyæmia 59, acute infective osteo-myelitis 6.

The same great preponderance in number of cases occurring in the seven months between November and May inclusive is observable in the number of cases collated in the decade 1869—1878, and treated of by the Pathological Society's Committee (which, however, includes a large number of the 175 cases here made use of), and in a less marked degree in the Registrar-General's weekly returns for London between 1882 and 1888 inclusive. Thus of 344 cases in the Pathological Society's report, 226 occurred between November and May inclusive, and only 118 between June and October inclusive. In the eight years of the Registrar-General's report 636 cases occurred in the seven monthly period, 418 in the five monthly.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Path. Soc. Report .	27	51	40	25	34	24	29	22	22	21	29	20	344
Registrar-General's Report .	83	76	98	98	101	78	76	81	94	89	94	86	1054

The difficulty of dealing with both these sets of statistics depends upon the fact that cases of pyæmia and septicæmia, two essentially distinct conditions are massed together; and

in the Registrar-General's report, cases of puerperal septicæmia, and septicæmia in abdominal cases are also included, still further increasing a source of error. Had the cases been of pure pyæmia the parallel would probably have been closer. The net result, however, is to show distinctly that cases both of ordinary pyæmia, and of pyæmia consequent on acute infective osteo-myelitis, are much less frequent during the summer months.

MORBID ANATOMY.

Frequency of affection of individual bones.

		Upper end.	Lower end.	Not stated.
Femur	19	9	6	4
Tibia	13	3	2	8
Humerus	6	4	—	2
Os Innominatum	1	—	—	—
Ulna	1	1	—	—
Tarsus	1	—	—	—
Total	41			

These numbers fully corroborate the statement that the femur, tibia, and humerus are the bones most frequently affected. It has been suggested that the special tendency of these bones to be attacked both by this disease and chronic tubercular mischief is due to the fact that they are the bones in which by reason of the necessity for rapid elongation, metabolism is most active and hence the blood supply the most abundant. If this explanation were the true one, we should for developmental reasons expect the lower epiphysis of the humerus to be the one most frequently attacked; but we have not one definitely recorded case of this, while we have 4 cases of affection of the upper epiphysis of the bone. Again in those tibial cases in which the locality is definitely stated, the majority occurred in the upper epiphysis, a fact also contrary to this theory. A much more reasonable explanation, however, exists in the fact that

these three bones are those most liable to strains. The femur and tibia bearing the whole weight of the trunk, the humerus that of the remainder of the upper extremity, and at times of the trunk also. That this liability to strain is the localising moment, moreover, is borne out by the fact that when either disease is the direct result of trauma, the bone damaged is that singled out by the morbid process. When no trauma has occurred, the long weight bearing bones are those attacked. This theory receives corroborative support in the frequency with which the same bones are singled out by malignant disease.

Secondary implication of joints by direct extension.

This occurred in eighteen cases—

Shoulder	5	Hip	5
Elbow	1	Knee	5
Tarsal joints	1	Ankle	1

These numbers show secondary implication of the shoulder-joint with acute osteo-myelitis of the humerus to be at least as common as implication of the hip when the neck of the femur is the primary seat of disease. The actual result here, however, points to its being more common, since the shoulder was affected five times with only 6 cases of humeral osteo-myelitis, and the hip five times in 9 cases of affection of the upper end of the femur. In No. 41, moreover, careful examination of the hip-joints showed no signs of suppuration, although both upper femoral epiphyses were affected, a certainly striking observation. The other somewhat noteworthy fact is the more frequent implication of the knee in cases where the primary mischief was in the upper end of the tibia than in those where the lower end of the femur was the primary seat of disease. This would be explained by the arrangement of the prolongation of the synovial membrane of the knee beneath the popliteus muscle. With regard to this point, however, it should be stated that it would seem by no means necessary to invoke the aid of the contiguity of certain parts of the synovial

membrane to explain these extensions. Both the synovial membrane and the epiphysis receive their arterial supply from the same source, while the blood is returned by veins taking the same course. Thrombosis occurring in the veins of the articular end of the bone would, therefore, readily extend to the veins of the synovial membrane, stasis having been first occasioned by the extension of clot into one of the larger common branches.

Secondary affection of distant bones.

The following Table exhibits the frequency with which deposits occurred in other bones ; these are much less frequent than would perhaps have been expected, when the commonly multiple character of the affection is remembered. This, however, may perhaps be explained by the fact that the whole of these cases died after a short period, and hence sufficient time had probably not elapsed for any number of fresh bones to become affected.

						Bone primarily affected.
Occipital	2	.	.	.	.	Femur.
Vertebra	1	.	.	.	.	Tibia.
Rib	1	.	.	.	.	Tibia.
Ilium	1	.	.	.	.	Femur.
Scapula	1	.	.	.	.	Femur.
Humerus	3	.	.	.	.	Femur 1, Tibia 2.
Ulna	1	.	.	.	.	Tibia.
Femur	3	.	.	.	.	Femur.
Tibia	2	.	.	.	.	Femur 1, Humerus 1.
Os calcis	1	.	.	.	.	Tibia.

TABLE II.—Showing Position of Primary and Secondary Deposits.

Nature of case.	Total.	Areolar tissue.	Veins.	Joints.	Lungs.	Lungs and pleura.	Pleura.	Pericardium.	Myocardium.	Kidney.	Spleen.	Liver.	Pancreas.	Peritoneum.	Brain.	Meninges.	Spinal cord.	Eye.	Various.	Internal de- posits only.	External de- posits only.	Both internal and external deposits.	
Acute bone cases.....	41	17	3	18	16	4	...	15	11	18	2	3	...	1	1	2	...	...	...	8	7	25*	
Cases of ordinary pyæmia.....	200	69	41	76	66	17	16	13	4	17	22	10	1	11	3	9	1	3	Uterus 2, viscera 2, salivary bubo 2	48	49	88†	
<i>One Hundred and Sixty-eight Cases of Pyæmia arranged in Classes.</i>																							
Fractures	29	7	9	11	9	3	2	...	...	2	3	5	...	1	...	1	...	...	...	...	7	10	12
Diseases of bones ...	7	3	1	3	3	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	2	3
Compound disloca- tions and wounds of joints.....	5	1	1	1	2	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	1	2
Diseases of joints ...	31	10	7	12	16	2	2	...	...	1	5	2	1	3	2	1	...	...	...	...	10	7	14
Middle ear disease...	8	3	4	3	1	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	3	4
Wounds of soft parts	25	15	3	11	7	4	...	4	1	2	4	...	...	...	...	3	...	...	...	...	8	6	11
Abscesses	17	10	3	5	7	3	...	1	...	2	2	...	...	...	...	2	...	...	...	...	3	4	10
Wounds and dis- eases of perineal region	28	10	8	11	11	1	1	4	2	4	2	2	...	1	...	...	1	...	...	...	7	11	10
Cases secondary to erysipelas or cel- lulitis.....	6	2	1	3	1	2	1	...	...	...	1	1	...	1	...	...	...	...	...	...	3	2	1
Diseases of the breast	6	3	...	3	3	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	4
Puerperal cases	6	2	2	3	1	1	1	...	...	...	...	...	...	2	...	...	...	2	...	...	2	2	2
Totals.....	168	66	39	66	61	19	10	9	3	12	19	10	1	9	2	7	1	2	...	47	48	73	

* 1 not stated.

† 15 not stated.

TABLE III.—*Showing percentage occurrence of Secondary Deposits in various Organs compared with Primary Cause of Pyæmia.*

	41 acute bone cases.	200 cases of ordinary pyæmia.	29 fractures.	7 cases bone disease.	5 compound dis-locations and wounds of joints.	31 cases disease of joints.	Middle ear disease, 8 cases.	25 wounds of soft parts.	17 abscesses.	29 wounds and diseases of perineal region.	6 cases secondary to erysipelas and cellulitis.	6 cases of disease of the breast.	6 puerperal cases.
Arcular tissue	41·4	34·5	24	42·8	20	32·2	37·5	60	58·8	35·7	33·3	50	33·3
Joints.....	43·9	38	37·6	42·8	20	38·7	37·5	43	29·4	39	50	50	50
Lungs.....	39	33	31	42·8	40	51·6	12·5	28	41	39	16·6	50	16·6
Lungs and pleura.....	97	8·5	10·3	...	...	6·4	25	16	17·6	3·5	33·3	16·6	16·6
Pleura	...	8	6·89	14·2	20	6·4	12·5	...	...	3·5	16·6	...	16·6
Pericardium	36·5	6·5	...	...	20	...	...	16	5·88	14·2	...	...	...
Myocardium	26·8	2	6·89	...	...	...	...	4	...	7·1	...	...	...
Kidney	43·9	8·5	10·3	...	...	3·2	12·5	8	11·7	14·2	...	...	...
Spleen.....	4·8	11	10·3	14·2	20	16	...	16	11·7	7·1	16·6	...	...
Liver	7·3	5	17	...	...	6·4	...	...	...	7·1	16·6	...	...
Pancreas.....	...	·5	...	...	...	3·2	...	...	...	...	16·6	...	33·3
Peritoneum	2·4	5·5	3·4	...	...	9·6	...	...	...	3·5	...	...	...
Brain	2·4	1·5	...	...	...	6·4	...	12	11·7	3·5	...	...	33·3
Meninges	4·8	4·5	3·4	...	...	3·2	...	...	...	...	...	...	...
Spinal cord.....	...	·5	...	...	...	...	...	...	...	...	...	...	...
Eye.....	...	1·5	...	...	...	...	...	...	...	...	...	...	...
Internal deposits only	19·5	24	24	28·5	40	32·2	12·5	32	17·6	25	50	33·3	33·3
External deposits only	17	24·5	34·4	28·5	20	22·5	37·5	24	23·5	39	33·3	...	33·3
Both internal and external	60·9	44	41·3	42·8	40	45	50	45	58·8	35·7	16·6	66·6	33·3

The above Tables show the position of the primary diseases, and the percentage occurrence of secondary deposits in the various organs, also the comparative frequency of pure internal, pure external, and mixed deposits. The numbers obtained from the acute bone cases are compared with those of the 200 cases of ordinary pyæmia already referred to. A short analysis of them will now be given, marking the extremes only.

Areolar Tissue.

Acute osteo-myelitis cases	.	.	41·4 per cent.
Two hundred cases of pyæmia	.	.	34·5 „
Pyæmia following:			
Wounds of soft parts	.	.	60 „
Amputation of breast	.	.	50 „
Abscesses	.	.	58·8 „
Diseases of joints	.	.	32·2 „
Fractures	.	.	24 „
Wounds of joints	.	.	20 „

Taking the 200 cases of pyæmia as a fair average, the acute osteomyelitis cases present a large proportion, but nothing like so large a percentage as found in wounds of soft parts and primary abscesses in the areolar tissue. On the other hand wounds of joints and fractures exhibit a decidedly low percentage; diseases of joints near the average.

Secondary Deposits in Joints.

Acute osteo-myelitis cases	.	.	43·9 per cent.
Two hundred cases of pyæmia	.	.	38 „
Pyæmia following:			
Chronic bone disease	.	.	42·8 „
Wounds of soft parts	.	.	45 „
Pyæmia secondary to erysipelas or cellulitis	.	.	50 „
Diseases of breast	.	.	50 „
Puerperal pyæmia	.	.	50 „
Wounds of joints	.	.	20 „

The acute osteomyelitis cases again exceed the average of 38 obtained from the 200 mixed cases, and the percentage corresponds almost exactly with that exhibited by other forms of bone disease. The largest percentage is offered by

the cases following erysipelas, cellulitis, removal of the breast, and puerperal pyæmia; the smallest by primary wounds of joints.

While compiling the above the frequency of secondary deposits in individual joints in the 200 cases of pyæmia was made out, the result being as follows:

Knee	39
Elbow	16
Shoulder	14
Ankle	12
Carpus and wrist	11
Hip	9
Sterno-clavicular	7
Phalangeal	8 (4 hand, 4 foot).
Acromio-clavicular	1
Multiple	4 Joints not stated.
Costo-central	1

The chief point noticeable is the very great preponderance of deposits in the knee and elbow, two joints enjoying very great freedom and range of movement, and an abundant arterial supply mainly by small anastomotic branches. These factors probably in some measure explain the frequency of their affection, which are seen in a less marked degree in the shoulder, hip, and ankle which come next in order, and in extent of synovial membrane at any rate exceed the elbow.

Secondary Deposits in the Lungs.

Acute osteo-myelitis cases	39 per cent.
Two hundred cases of pyæmia	33 „
Pyæmia following:	
Diseases of joints	51·6 „
Amputation of breast	50 „
Other diseases of bone	42·8 „
Abscesses	41 „
Wounds of soft parts	28 „
Cases secondary to erysipelas and cellulitis	16·6 „
Puerperal pyæmia	16·6 „
Middle ear cases	12·5 „

The acute osteomyelitis cases exceed the average, but not nearly so markedly so as the four classes next arranged,

while the small percentage in the three last classes is especially striking, the more so when it is considered that all three series are those liable to be accompanied by somewhat extensive gross thromboses. This immunity from pulmonary infarcts no doubt goes far to explain the comparatively good prognosis in both classes of case.

Secondary Deposits in the Pleura.

The fourth and fifth columns give the number of cases in which both lungs and pleura, and pleura alone were affected. The comparative frequency of the escape of the pleura with pulmonary infarcts is somewhat remarkable.

Secondary Deposits in the Heart.

The next two columns refer to the heart substance and pericardium. The numbers fully substantiate common experience as to the comparative frequency of secondary deposits here, although they fall far below the numbers given by Mr. Stephen Paget,¹ where out of 18 cases the heart was affected in 10.

In the present series of acute bone cases the pericardium was affected in 36·5 per cent., the myocardium in 26·8. The average in the 200 cases of ordinary pyæmia reaches only 6·5 for the pericardium, and 2 per cent. for the myocardium, and the whole of these deposits were met with in cases either of wounds of soft parts or primary abscesses in the areolar tissue.

Secondary Deposits in the Kidneys.

Acute osteo-myelitis cases	.	.	43·9 per cent.
Two hundred cases of pyæmia	.	.	8·5 „
Pyæmia following :			
Wounds of perineal region	.	.	14·2 „
Middle ear disease	.	.	12·5 „
Abscesses	.	.	11·7 „

This again agrees with the results quoted by Mr. Paget,

¹ 'Lancet,' February 12th, 1887, p. 314.

the only other series of cases in which the average of renal infarcts is passed being those quoted above.

Secondary Deposits in the Spleen.

Acute osteo-myelitis cases	.	.	.	4·7 per cent.
Two hundred cases of pyæmia	.	.	.	11 „

Reference to the main Table shows that the percentage occurrence here is lower than in any other series in which splenic infarcts were met with.

Secondary Deposits in the Liver.

Acute osteo-myelitis cases	.	.	.	7·3 per cent.
Two hundred cases of pyæmia	.	.	.	5 „
Pyæmia following:				
Fractures	.	.	.	17 „
Cases secondary to cellulitis and erysipelas	.	.	.	16·6 „
Wounds in perineal region	.	.	.	7·1 „
Diseases of joints	.	.	.	6·4 „

Deposits in the liver in acute osteomyelitis cases exceed the average in the 200 cases of ordinary pyæmia slightly, but come far below those following compound fractures; a series comparable with the numbers given by Mr. Paget in which 56 liver abscesses were met with in connection with 217 cases of suppuration of the medullary cavities of bones. It is of interest that in the two cases in which the liver was affected in the perineal series, one was a case of stricture of the urethra, the other a sloughing uterine fibroid. In the fracture series none of the liver deposits were secondary to cranial injuries.

The occurrence of the less frequent deposits are shown by a glance at the Table, which also shows at the foot the relative frequency of internal and external pyæmia. The frequency of mixed deposits in acute infective osteomyelitis appears greater than in the ordinary form.

It is worthy of remark that secondary deposits in the eye occurred in 1·5 per cent. of the 200 cases of general pyæmia, and in 33·3 per cent. of the puerperal series.

One column in Table II is devoted to the presence of

gross thromboses, these, however, were almost entirely local extensions, in only 5 of the 41 cases were the thromboses metastatic.

Clinical remarks.—As to the clinical aspect of these cases, there is little to call for comment, the symptoms closely conforming to those usually described, the locality of the primary mischief and secondary deposits having been already considered under the heading of morbid anatomy.

Onset.—The occurrence of pyæmic symptoms usually very closely followed the first signs of the primary disease, clearly showing that these cases belong to the most acute form of pyæmia. Thus, in 35 cases in which approximate data were forthcoming the average period after the first signs of the bone mischief is six and a half days. In 119 cases of general pyæmia the average period after primary disease or injury amounted to 10·15 days.

Duration.—The average duration in 41 cases amounted to twelve days, with extremes of twenty-eight days and one day. In 11 cases, or about a quarter of the whole, the duration exceeded fifteen days. This corresponds very nearly with that in 133 cases of ordinary pyæmia, where the average duration was 10·15 days.

Death usually resulted from septic fever and exhaustion, but in one case, No. 21, it resulted from rupture of the heart and was sudden. This is of interest when considered with the frequency of myocardial deposits in these cases.

Cutaneous eruptions.—In 5 cases (Nos. 11, 13, 30, 32, and 41) of our Table, or 12 per cent., a pustular cutaneous eruption was noted resembling an acute acne, or in some cases a pustular eczema. It is interesting to note, that while in the cases of general pyæmia, the eruption varied in character; in all the osteomyelitic cases it was pustular.

In relation to this it should be stated that in the former disease other organisms besides the staphylococcus pyogenes aureus and albus are frequently present, while in the latter these are sometimes alone found, at any rate prior to the opening of abscesses, and are well known to be a cause, of superficial skin suppuration.

On this subject the records of 200 cases of ordinary pyæmia were searched, and among them cutaneous eruptions,

or purpuric spots, are mentioned in 23. There is, unfortunately, no doubt that this number falls far short of the true average, since the whole were met with among the most recent 100 of the cases reported. This would bring the percentage occurrence of eruptions up to an average of 20, and makes their insertion here the more worthy, since little mention is made of them in the text-books.

As already stated, the phenomena in the acute bone cases were in all of a pustular character, but in the general pyæmia series they were much more varied. Thus we find—

(a) In 7, purpuric spots. These consisted of purple patches of varying dimensions, in one presumably due to capillary stasis and thrombosis only as it is described as of a “peculiar mottled appearance.”

(b) In 2, a papular eruption. In the first, a rash consisting of papules of varying size, distributed over the whole body, but most numerous over the face and arms. It came out early, lasted several days, fading before death on the twentieth day. The patient was the subject of a mammary carcinoma with secondary deposits, and no actual primary cause was discovered. Post mortem a suppurating costo-central articulation was found, but it was doubtful whether this was a primary or secondary phenomenon, since pus was also present in the shoulder joint.

In the second case a general red papular eruption was present as well as patches of erysipelas migrans. In this case the cause of the pyæmia was the removal of a sequestrum from the tibia in a patient, the subject of acute infective osteomyelitis eight months previously.

(c) In 2, pustular eruptions; in one, a case of ulceration of intestine, the pustules being mixed with vesicles, and in another slate-coloured maculæ were, in addition, noted at the post-mortem examination.

(d) In 3, erythematous eruptions are noted; in one of these the condition resembled erythema nodosum, in a second a German measles rash, and the other consisted in patchy redness only.

(e) In 1, an eruption of sudamina.

(f) In 8, the more common erysipelas migrans. This eruption is no doubt greatly understated.

To these cases one of exceptional interest and rarity may be added. The patient inoculated himself while performing the duties of post-mortem clerk. Two days later he had signs of a lymphangitis with an enlarged glandular swelling in the axilla, this improved somewhat, but on the fourth day he became covered with a general red rash, so much resembling scarlet fever that he was placed in the scarlet-fever ward. The rash covered the whole body from the neck downwards and persisted for six days, fading gradually. On the fourth day he became jaundiced, and a week later the axillary swelling suppurated. On the fourteenth day there were signs of pus in the elbow joint, and on the seventeenth day he died. In this case the eruption preceded actual evidence of secondary deposits, but in any case was probably due to septic infection eventually producing typical pyæmia. Another possibility of course exists, viz. that the case was merely one of scarlet fever and followed by pyæmia.

Treatment.—The treatment throughout consisted of free incision, and the liberal use of stimulants. In two cases amputation was performed, and in one the joint first affected was excised (a method which has been followed by good results in the case of the hip) without avail.

Among the 200 cases of pyæmia, secondary amputation was performed eight times, only once successfully, and that in a somewhat chronic case, for suppuration of the knee following a sequestrotomy operation on the os calcis. No doubt other cases where the removal by amputation of the primary injury on signs of septic poisoning was performed may have been more successful, but these numbers hold out but slender hopes for the success of amputation when acute pyæmia has actually developed. It may be added, that of the 200 cases of pyæmia from general causes 10 recovered.

A short abstract of these cases is added as, although not capable of comparison with the osteo-myelitis series, they are of sufficient rarity to be of interest.

In the first five cases noted pyæmia developed within the hospital, in the second five the patients were admitted with the disease.

1. F., æt. 12. Tubercular disease of knee-joint for which excision followed by an amputation of the thigh fourteen days later were performed. The secondary deposits were confined to the areolar tissue planes. The duration of the disease is noted as thirty-one days.

2. M., æt. 32. Necrosis of os calcis, for which sequestro-tomy was performed; pyæmia supervened on the seventh day, and nineteen days later a secondary amputation of the thigh was made. Secondary deposits were followed by abscesses in the areolar tissue and left knee-joint, and symptoms pointed to a pulmonary infarct. The duration of the disease is noted as 143 days.

3. M., æt. 40. Crush of foot, for which Hey's amputation was performed. Septic phlebitis of the calf with the formation of large abscesses occurred, and dyspnœa and bloody expectoration pointed to a pulmonary infarct. The patient had a general eruption resembling that of German measles for a few days at the onset of symptoms. The duration of the disease is noted as 193 days.

4. M., æt. 25. Varicocele. Treated by open excision, the patient, an eccentric man who had suffered from one attack of mania, removed the dressings on the twelfth day, and two days later signs of pyæmia developed. The attack was very acute, accompanied by the formation of abscesses in the left knee-joint and right ankle-joint; these were both incised and drained and he made a good recovery. Convalescence, however, was followed by a second attack of mania. Duration of treatment eighty-six days.

5. M., æt. 24. Fracture of tibia and fibula with laceration of the anterior tibial artery. Primary amputation was followed by signs of pyæmia in a few days, abscesses developing in both shoulder-joints, the right elbow-joint, and in the areolar planes.

The average duration of four of these cases was 113 days, hence they would be classed as chronic; in all, however, the onset was acute, and in Nos. 3 and 4 very acute.

The long duration results from the fact that the period of convalescence is included, the number of days given being the length of their stay in the hospital.

They offer excellent examples of the efficacy of freely incising secondary abscesses, a plan not always adopted in cases which seem certain to end fatally as was indeed the case in two of these.

One other noticeable point in this short series is that in two out of five there was good reason to infer the occurrence of internal deposit in the lungs, three only being instances of pure external pyæmia.

6. M., æt. 25. Disease of middle ear. Abscesses formed in the areolar planes. The patient was discharged on the forty-ninth day.

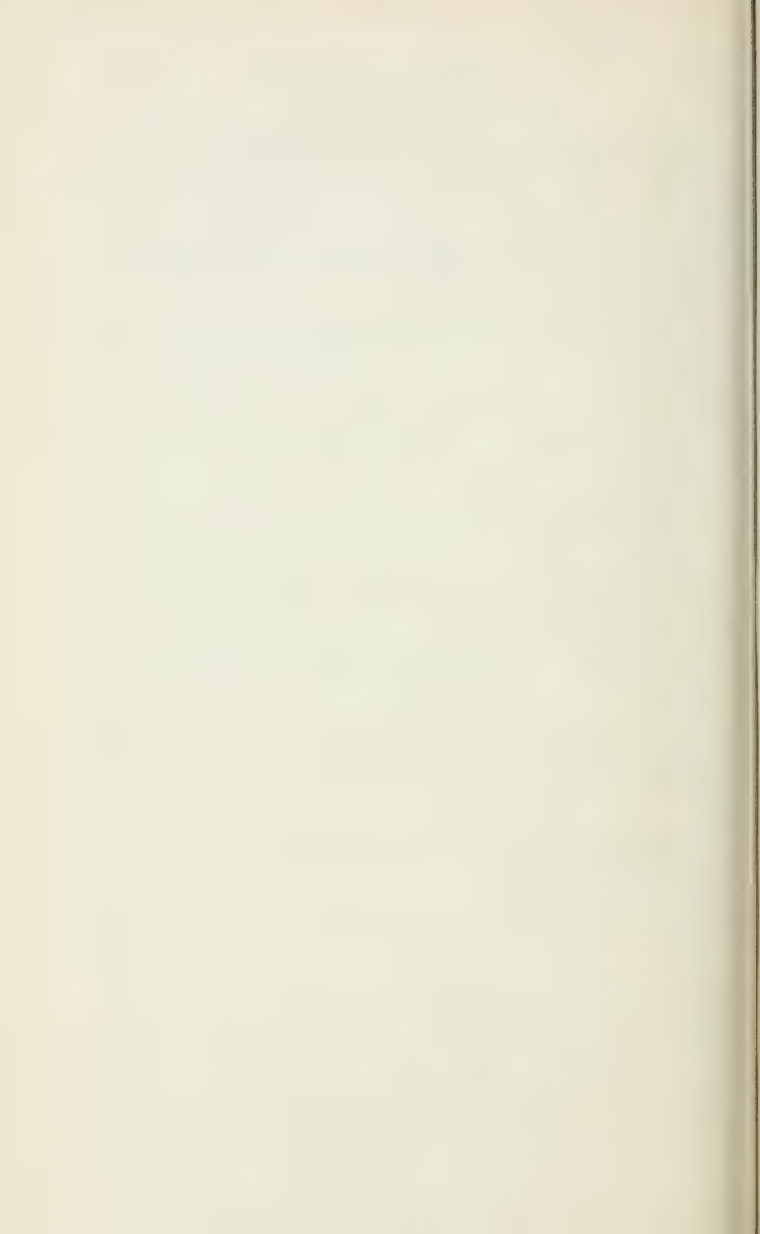
7. M., æt. 18. Necrosis of pelvis. Pyæmia followed the incision of abscesses. Secondary abscesses occurred in the knee, hip, and elbow-joints. The patient remained in hospital 240 days.

8. M., æt. 41. Abscess of arm. Signs of pyæmia were noted five weeks after the development of the primary abscess. Forty-two abscesses were afterwards developed about the body, none, however, below the level of the knees. The patient was discharged on the eighty-fifth day.

9. M., æt. 57. Whitlow. Pyæmia was noted on the fourteenth day, and abscesses developed in the areolar planes. The patient was in hospital thirty days.

10. F., æt. 37. Puerperal. Pyæmia did not occur till the tenth week after confinement, abscesses developed in the areolar planes only. The patient was in hospital 209 days. Average duration about 122 days, extremes 30 and 240.

All these were cases of external pyæmia, and in only one were joints affected.



SEVEN CONSECUTIVE CASES
OF
OPERATION FOR INJURY TO THE
CRANIAL VAULT.

BY WILLIAM HENRY BATTLE, F.R.C.S.

THE following series of cases in which it was considered necessary to operate for injuries of the cranial vault are of considerable interest, more especially so from the fact that they are not selected, but are those which it has been my duty to treat during the past, either at St. Thomas's Hospital or at the Royal Free Hospital. For permission to publish those treated in the former institution I am indebted to the surgeons under whose care they were admitted.

The first four cases are examples of compound fracture of the vault, and fragments of bone were depressed and comminuted; in two of them the dura mater was also wounded. Case 5, one of severe injury to the brain as well as wound of the dura mater. Case 6, one of punctured fracture with suppurative of a septic character in the wound. Case 7, one of bullet wound of the brain in the temporal region.

As regards the dressing of the cases and the solutions used, it will be noted that these were antiseptic, though the

kind of antiseptic varied somewhat. In the earlier cases carbolic acid and the use of the spray were found efficient, then iodoform dressings with carbolic solutions but no spray; then perchloride of mercury was employed, and this is the dressing which I have found most satisfactory; the application of it to the wound does not cause that exudation which it is of importance to avoid when early union is desired, and the gauze being less stiff than the carbolic, adapts itself more evenly to the surface on which it is placed.

CASE 1. Compound comminuted and depressed fracture of skull in the left parietal region; trephining; recovery.—R. H—, æt. 30, a labourer, was admitted into the Edward Ward of St. Thomas's Hospital on the 6th of March, 1886, under the care of Mr. Croft (Mr. J. Hewan, dresser).

About twelve, midday, he was walking beneath a traveller in a workshop, the traveller being thirty-five to forty feet above the ground, when one of the brackets supporting the driving-rod, weighing about half a hundredweight, fell and struck him on the head. He was insensible for about a quarter of an hour, and on coming-to was not sick, nor did he feel giddy. The wound bled a good deal.

On admission he looked pale, the pulse was slow, and pupils contracted, but he talked quietly and complained of no pain. Over the hinder part of the left parietal there was a starred wound a short distance from the middle line. About two and a half hours after the accident he was placed under chloroform and his head shaved. The three arms of the starred cut of the scalp were prolonged, and the scalp dissected off the bone and retracted, several arteries requiring to be secured. The trephine was then applied to the left of the fracture, the circular piece removed with the elevator, then the depressed portions removed and the edges of the opening trimmed with the parrot-bill forceps. Two or three small pieces of the inner table were found embedded in the dura mater, and removed with forceps, though the inner table was not much depressed. Before the operation the head, and more especially the wound, was carefully cleansed with carbolic lotion, and during the operation a solution of similar strength (1 in 40) was used to irri-

gate the parts exposed. Catgut sutures and two drainage-tubes were inserted. A small quantity of iodoform powder sprinkled in the wound, oil-silk protective placed over it, and wet iodoform gauze, then salicylic wool, over which pink macintosh was placed, and the whole secured by gauze bandages. No pain or vomiting followed the operation, and he expressed himself as comfortable, at night, when the temperature was 100° and the pulse 106.

On the 7th there was complaint of slight headache, and 5 grs. of calomel were given; the highest temperature was 99° at 8 p.m.; pulse 88.

On the 9th the wound was dressed and the tubes shortened.

On the 12th the pulse was 68. The wound was again dressed.

On the 13th all the stitches were removed, also one of the tubes. He was kept on fluids for some days, then the diet was gradually improved, and he left the hospital on 29th of March quite well, without apparent weakness of the mind or body.

CASE 2. Compound depressed fracture of the skull in the occipital region; trephining; recovery.—J. W—, æt. 11, a coster's boy, was admitted into the Leopold Ward under the care of Sir W. MacCormac on the 27th of June, 1888. A short time before admission he had been struck on the back of the head by half a brick, which had been purposely thrown at him. He had lost consciousness for only a few seconds.

On being brought to the hospital he was found to have a lacerated wound in the upper part of the left occipital region, about an inch and a quarter in its greatest length and gaping widely. There was not much hæmorrhage. A finger introduced felt bare bone at the bottom of the wound, also that part of this was depressed under the skull, at the inner and upper part, the depression amounting to about one third of an inch. The free rough edge of the skull could be distinctly felt in this situation. He was quite conscious, and not in much pain. There was no shock.

In the evening chloroform was given, the posterior part of the head shaved, and washed with carbolic lotion. The wound was then enlarged by incision, and a cut made at right

angles to this, and the fracture fully exposed; the outer and lower part of the depressed part was still attached, and on a level with the uninjured bone. The attempt to lift the depressed fragment without trephining was unsuccessful, so the three-quarter inch trephine was applied, and after the removal of the crown of bone, the depressed part and some loose fragments were removed, after which the dura mater bulged into the wound. There was now seen to be a cut in it about a quarter of an inch in length, which bled somewhat. Several small splinters were then removed from under the margin of the bone around. Silk sutures and a moderate sized drainage-tube were introduced, the tube having both ends protruding from the extremities of the longer wound, which was dressed with iodoform gauze and salicylic wool. He vomited copiously when being put under chloroform, and again while the depressed bone was being elevated.

June 29th, p.m.—Wound dressed and found quite healed, with no excess of discharge in the dressings, so the stitches and tubes were removed.

July 18th.—The place where the tube was put is granulating.

28th.—He is very unruly at times and mischievous, and has to be confined to the bathroom.

The temperature at no time exceeded 98.6° , and when he left the hospital on the 29th of August he was quite well.

CASE 3. *Compound depressed fracture of skull in the frontal region; trephining; recovery.*—P. B—, æt. 5, was admitted to St. Thomas's Hospital under the care of Mr. MacKellar on the 5th of July, 1888, (Mr. Hughes, dresser).

He was riding on a pony, which threw him off and kicked him on the head. On admission the boy was perfectly sensible and quiet, with pupils normal and reacting to light, and there had been no vomiting. On the right side of the head, about an inch and half above and behind the external angular process, the integuments of the scalp were divided right down to the bone, the wound being bow shaped and about an inch and a half in length, its direction being from before backwards and slightly from left to right. On introducing the finger into the wound a rough bony edge could

be felt, and behind this a depression about half an inch deep, extending the length of the wound, could be distinctly made out. The depressed piece of bone was immovably fixed beneath the anterior ridge. There was no hæmorrhage. Antiseptic applications were made and the patient removed to bed, where he lost consciousness and vomited several times. Chloroform having been given the scalp wound was enlarged backwards towards the right ear, the periosteum cleared off, and the trephine applied to the anterior ridge; and a piece of bone having been removed, the depressed part was raised by the elevator and the rough depressed edge snipped away with the bone forceps (parrot-billed). A small wound was discovered in the dura mater from which there was considerable oozing of blood. The periosteum having been drawn together as much as possible, a drainage-tube was inserted and the flaps stitched up with catgut sutures. Iodoform dressings were applied. 9.30 p.m., temp. $96\cdot2^{\circ}$.

July 6th.—A.m., left pupil the larger, pulse 124. Vomiting after calomel. P.m., pupils equal.

8th.—12 o'clock, pulse 100.

9th.—The child has been very drowsy since the operation. To-day the wound was dressed, the tube and stitches removed.

12th.—The child is absolutely free from pain and is bright and cheerful.

14th.—Boy apparently in perfect health, wound dressed under the spray, quite healthy, gaping slightly at the ends of the incision. At these points a small quantity of semi-organised lymph. No pus.

24th.—Boy quite well with no symptoms of any kind. The temperature at no time exceeded 99° .

He left on July the 29th, having been supplied with a metallic plate for the protection of the seat of operation.

CASE 4. *Compound comminuted and depressed (gutter-shaped) fracture of the skull in the frontal region; operation; primary union without drainage.*—R. W—, a boy, æt. 8, was admitted to the Royal Free Hospital on the 8th of February, and discharged well on the 2nd of March, 1890.

He was playing in a loft and fell out of the window, a

distance of ten feet, on his head, he did not lose consciousness, but bled a good deal from a wound in the head. He was brought at once to the hospital. He was quite conscious on arrival, but seemed very irritable, and screamed loudly on being touched near the injured part. There was a small lacerated wound in the scalp about half an inch long, extending down to the bone, situated three inches above and two and half inches in front of the left external auditory meatus. Below this and extending about two inches forwards and half an inch backwards could be felt a ridge of bone, above which the skull was depressed. The direction of the depressed part was forwards and upwards. There was a good deal of hæmorrhage from the wound. There were no signs of injury to the brain. Chloroform was given and the whole head shaved and cleaned with carbolic lotion, soap, and the nail-brush. An incision was then made following the line of the depression but somewhat longer, about three inches, and on reflecting the scalp the bone was found to be splintered and the fragments depressed in a gutter-shaped manner. The point of the elevator was put under one of the depressed fragments which was elevated and removed. Two small pieces were removed from near the centre with bone forceps, and then those remaining were lifted into position. The dura mater was uninjured. A good deal of oozing continued from under the bone during the operation. The edges of the original wound were cut off with scissors, so as to remove any damaged tissue or dirt, the whole washed out with perchloride solution 1 in 1000, and dressed with perchloride gauze and wool, after the edges had been carefully apposed by means of silk sutures.

The temperature, which was 98° p.m. on the day of operation, rose to 98.8° at 8 p.m. of the following day, and to 99° at 8 a.m. of the 10th. It did not reach 99° again, being 98.2° on the 11th, and on and after the 12th, 98.6° morning and evening for as long as the observations were taken.

The wound was dressed for the first time on the 19th and the stitches removed. Again on the 24th, when it was evidently soundly united, and on the 27th, when all covering was removed and the boy got up. After the operation there was no complaint of pain, and progress was uninterrupted.

In these cases the result would have been considered perfect a few years ago, but in the present day we are not quite content with merely saving the patient's life, and preventing the onset of any of those complications which formerly proved so fatal after the operation of trephining. We intend to get our patient well just the same, but with a condition of skull nearly if not quite as perfect as it was before the accident. Therefore Case 4, which was the only one in which I have felt justified in trying for primary union throughout the wound without drainage, does not come up to the ideal case, for I did not replace any bone to close the opening in the vault, thinking that the pieces removed had been damaged, and having some dirt in them, were not safe from danger of infecting the wound or certain to survive their injuries. It will be seen that this case is the only one which appeared to me to present a possibility of primary union, and the record of the case shows the means, including excision of the bruised edges of the wound, taken to obtain success. The bone removed in this case can hardly be considered in the same light as that of the crown separated by the trephine, with antiseptic precautions, the replacement of which is not unfrequently followed by a satisfactory result.

It is true that some new bone may form in the membrane which closes in the opening when no bone is replaced, and if the gap is small it may be difficult to feel the pulsations of the brain through the old opening, but a more certain result is obtained by replacement of the bone.

CASE 5. Compound comminuted fracture of the skull in the right temporal region with wound of the brain ; operation ; recovery ; epileptiform seizures.—Emily S—, æt. 27, a machinist, was admitted into the Royal Free Hospital on the 3rd of January, 1889.

She had been knocked down by a hansom cab in the street, and it was supposed that the end of a shaft had struck her head. When examined she was found to be intoxicated. There was a scalp wound at the back of the head of small size, and another in the right temporal region below the temporal ridge, and about two inches behind the external

angular process of the frontal bone. The region of the wound was swollen from extravasation of blood and from the swelling of the temporal muscle. Some brain substance protruded into the wound, which was large enough to admit the index finger and extended from before backwards. The finger passed downwards and forwards through this wound to a hole in the bone about the size of a five-shilling piece, through which the tip could be passed, and from the margins of which fissures could be felt to radiate in various directions. Mr. W. R. Cox administered chloroform, and after thorough disinfection of the wound and parts around and shaving the head, incisions were made, one in the direction of the wound, extending it from before backwards; another from the centre of this downwards in the temporal region, and sloping somewhat forwards in front of the ear. The temporal muscle was incised and cleared away from the region of the fracture to an extent sufficient to expose the injured bone, and then retracted with blunt hooks. The opening was found partly blocked by depressed fragments of the thin bone all of which were removed with the elevator or forceps. The dura mater was torn and some brain matter escaping from the rent. The wound was thoroughly washed out with solution of perchloride of mercury 1 in 1000, and loose pieces of brain and any remaining débris of bone thus removed. The edges of the dura-matral rent were adjusted without sutures, the muscle replaced over the opening in the bone (the lower edge of which was below the level of the zygoma), and the external wound closed with wire sutures. Two drainage-tubes were used, one placed at the posterior extremity of the transverse, and the other at the lower end of the longitudinal wound; one end of the latter tube extended down to the dura mater. Perchloride dressings were applied. There were no cerebral symptoms before the operation.

January 4th.—The patient is very flushed and restless, pupils a little dilated but equal. She complains of being hot and thirsty, and has vomited some frothy slightly blood-stained fluid during the night, and still vomits occasionally this morning. She is violent, obstinate, and will talk. Evacuations passed in bed, probably from wilfulness. Pulse 120. Wound dressed at 3 p.m., looking clean. The upper tube

was removed, some brain substance was found in the lower tube. Temperature a.m. and p.m. $98\cdot6^{\circ}$.

5th.—Still vomits at intervals. Required the use of the catheter last night. Temperature a.m. $98\cdot6^{\circ}$, p.m. $99\cdot2^{\circ}$.

7th.—Yesterday discoloration of the right eye showed itself with œdematous swelling of the lids; œdema has now extended over the cheek and forehead. Vomiting ceased yesterday, and in the evening the wound was redressed and the last drainage-tube removed. Temperature a.m. $99\cdot8^{\circ}$, p.m. 99° .

8th.—Three stitches removed; as there seemed to be some bulging of the wound, a probe was passed from below and gave exit to some clear, normal, cerebro-spinal fluid. She talks continuously during the dressing, sometimes entreatingly, sometimes in a threatening manner.

10th.—Remaining sutures removed; fluid flowed from one of the suture punctures and from the opening left by the lower tube.

12th.—A considerable quantity of fluid escaped when a probe was passed, and when tested it showed the presence of chlorides, some phosphates, there was slight precipitate on heating, and on addition of HNO_3 , and a substance was present which reduced CuSO_4 (pyrocatechin, orthodihydrobenzol).

16th.—Still some fluid escaping when wound is dressed. Earlier in the day she complained of the pressure of the bandages, and they were cut a little over the forehead. She says she feels very ill and think she is going to die. A dose of *Mist. alba* was given.

18th.—Temp. 102° . Patient complaining of sick headache, and depressed in spirits; there was a trace of pus in the dressings.

19th.—Temperature falling; cerebro-spinal fluid flowed from the wound on probing. *Ol. ricini* given.

20th.—Wound quite healed. She got up on the 28th and left on the 31st of the month. Was accustomed to talk very much and invent stories.

About five weeks after she left the hospital she came to the out-patient department stating that she had had fits. That the first of them came on three weeks after leaving and was severe, unconsciousness lasting for about half an hour. She had recovered from that, but a few days later

other fits had seized her. From the description of these attacks given by herself, there was every probability that they were of epileptiform character, but it was not possible to get any independent testimony; they were said to be general and not commencing in any way that indicated a localised lesion of the brain. A mixture of iodide and bromide of potass was given and she improved very much, no more fits being complained of for some time; but after about six weeks of this treatment, it was evident that the bromide was acting injuriously, she complained of great depression of spirits, looked dull, and listless, was drowsy and incapable of mental exertion. The iodide mixture was continued and the bromide omitted from it, and the general health improved rapidly, but in about another fortnight the patient came again complaining that she had had another fit; the administration of the bromide was again commenced but in smaller doses, and another fit in June was of a less severe character. The mixture with slight variations and occasional intervals was continued for some months, and no further epileptiform seizures was reported. Menorrhagia was a cause for complaint after the operation and the loss was often so excessive, that it was considered advisable to suspend other treatment and give tincture of *Hamamelis Virginica*, which acted satisfactorily. After an absence of some months from the out-patient department she came in September of 1890 complaining of a sore mouth; this was due to the presence of *plâques muqueuses*. She had also condylomata of vulva and anus, with a scaly eruption on the body and other signs of secondary syphilis. She was in a poor condition of general health, and advised to apply for admission to an infirmary.

The injury received by this was far more severe than that received by any of the other patients; the loss of brain substance was considerable; there were fragments in the wound track, and more washed away from the lacerated area during the operation. One great danger in cases such as this, even when an aseptic wound has been secured, is that of the formation of a *hernia cerebri*. This is prevented to a great extent by the shape of the flap made in operations for the removal of cerebral tumour, but after removal of bone for

compound comminuted fracture, where the surgeon has been obliged to utilise a pre-existing wound which usually crosses the injured spot, the newly-united incision is apt to give before the pressure of the commencing protrusion and a hernia to form. Here the tendency to hernia was kept in check, not only by the early union of the incision, but also by the tonic elastic pressure of the temporal muscle which also covered its surface. Another point of interest was the discharge of cerebro-spinal fluid from the operation wound; an occurrence of rarity in fracture of the vault without injury to the lateral ventricle, but easily explained here by the extension of the wound of brain and membranes to the under surface of the tempero-spheroidal convolutions.

CASE 6. Punctured fracture of the skull in the frontal region; operation five days afterwards; recovery.—A. B—, æt. 7, was admitted to the Royal Free Hospital on the 3rd of April and left on the 1st of May, 1890.

On the 29th of March he had been struck in the forehead with the peg of a top which had been thrown at him, making a small punctured wound over the right frontal eminence. He applied at the hospital on the day of admission, presenting a rounded swelling two inches in diameter about the wound, and a good deal of surrounding œdema; the eyelids on the right side were swollen. A purulent discharge flowed from the puncture and a small depression could be felt in the bone into which the end of the probe passed. A free incision was made by Mr. E. C. Stabb, but as the hole in the bone extended more deeply than was apparent in the first instance, it was considered best to send for the surgeon on duty. Leave was obtained to explore and operate if necessary. Chloroform was given and a small-sized trephine applied. The inner table of the bone was found splintered, and there a small clot on the outer surface of one of the splinters, marking the point at which the peg had been stopped. These splinters were removed. The dura mater was normal. The disinfectant used was perchloride of mercury 1 in 1000, and perchloride dressings were afterwards applied, the greater part of the wound being left open for free drainage. Before the operation there were no signs of cerebral injury;

no vomiting. The temperature was 99.5° , and the bowels were confined.

April 4th.—Had vomited during the night and the eyelids were more swollen. The bowels were opened after an enema. In the morning the temperature rose to 102.4° , but fell to 102° next morning at 6 a.m., and to normal midday. There is nothing further to record as the boy rapidly recovered, the wound closing by granulation.

We need not consider at any length the treatment of this case. There was a punctured fracture of some days' duration, situated at the bottom of a septic suppurating wound, and the puncture in the bone formed for the septic pus a channel of access to the membranes, and a great source of danger from the likelihood of meningitis as a result of that extension. The wound was thoroughly drained, injured bone removed, small splinters on the dura mater taken away, and the wound placed in an aseptic condition as far as possible. The necessity for trephining in punctured fractures in the adult is thoroughly recognised.

CASE 7. *Bullet wound of brain; lodgment of bullet; trephining; recovery.*—A. V—, æt. 35, a publisher, was admitted to the Royal Free Hospital on the 28th of August, suffering from a bullet wound of the head.

Two hours and a half before admission he had shot himself with a small Colt's revolver in the right temple. He had attempted to commit suicide, as the result of intemperate habits and poverty.

On admission.—Over the right temporal region, half an inch behind and three quarters of an inch above the external angular process, was a small contused wound with depressed edges. Around this the skin was blackened and tattooed with grains of gunpowder. A probe passed by the house surgeon entered for a distance of three inches, but no bullet was felt. The patient looked pale, and suffered slightly from shock; the hands were cold, but he was quite conscious and able to answer questions. Vision was not impaired in either eye. The pupils were equal and acting, and there had been no vomiting. In the absence of my colleagues, I was sent for and decided to explore the wound. Ether was first

given, but as the patient resisted, chloroform was substituted and ether used again later. The skin was washed with carbolic acid solution, 1 in 40, and the hair in the neighbourhood shaven off. A curved incision was then made, with the convexity downwards and forwards, about three inches in length, passing just below and in front of the wound; pressure was then made by the middle and ring fingers over the superficial temporal, and after it had been divided in the incision ligatures were applied. The incision was carried through the temporal muscle to the bone. The muscle was then separated from the bone for some distance on each side of the hole in the bone and the soft parts retracted. The opening was about a quarter of an inch in diameter, and the bone leading to it had been grooved for a short distance by the bullet. Some splinters of bone were seen and felt and an attempt made to remove them with bone forceps, but the opening was too small to admit them; accordingly a three quarter inch trephine was applied including part of the circumference of the opening. On removal of the circle of bone a good deal of blood welled up, pulsating; it appeared to have escaped from a small branch of the middle meningeal artery, but was easily controlled by pressure. Four splinters of bone were taken from the lower and front part of the wound, also two pieces of the bullet; corresponding to the opening in the bone was a small laceration of the dura mater, and a probe was carefully passed through this into the brain, but nothing abnormal being felt in the direction in which the bullet was supposed to have gone, nothing more was attempted in the way of exploration. The wound was washed out with 1 in 1000 perchloride of mercury solution, the bullet track in the soft parts excised, fine silk sutures put in, a drainage-tube placed in the most dependent part, and perchloride dressings applied. Half a minim of croton oil was given at once.

August 29th.—During the night he had a hypodermic injection of morphia on account of restlessness, and vomited once, but slept most of the night, and is quite rational and without pain this morning. The stitches and tube were removed on the 30th. The wound healed by the first intention, and there are no symptoms to record. He was kept

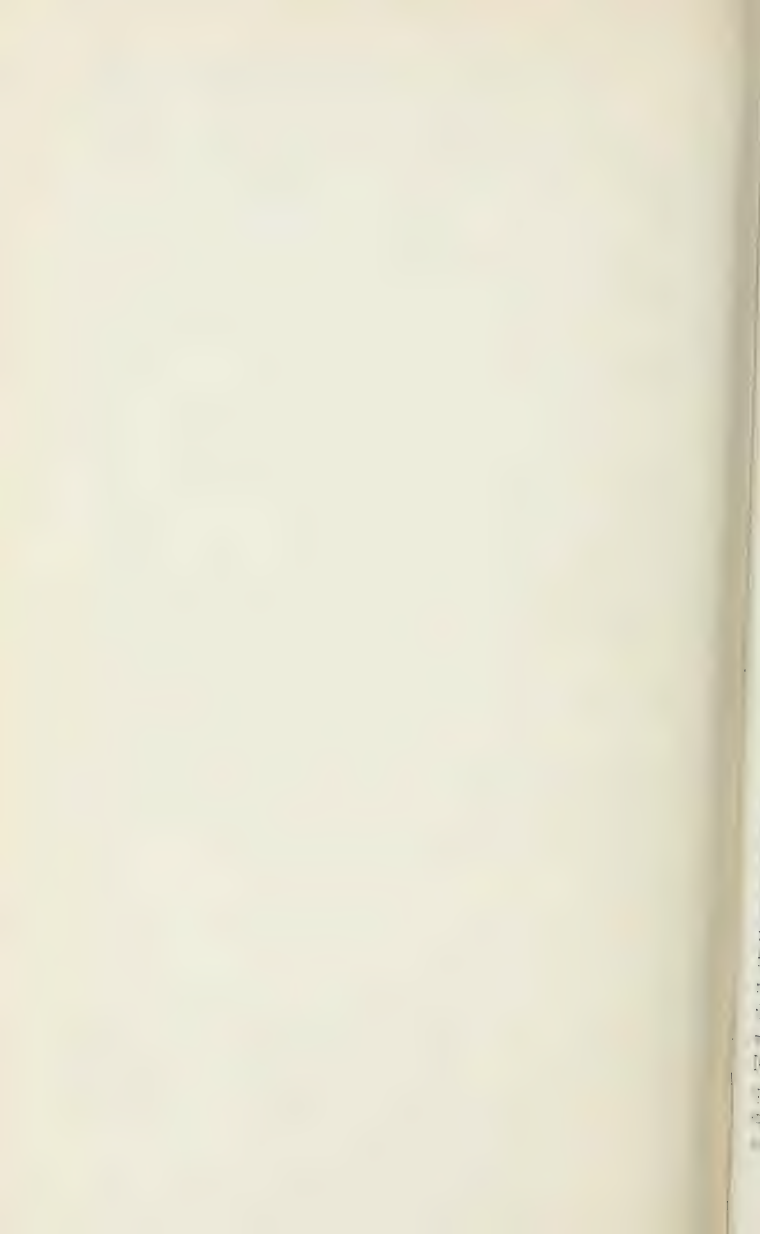
in bed for more than a fortnight. After operation the temperature rose to 100.8° and later registered 100.2° . Next morning it was 99.8° , rose on the 30th p.m. to 100° , but gradually fell to normal and below, so that by the 18th of September it had fallen to 97° , a.m., then regained and maintained the normal level.

He left the hospital on the 6th of October quite well, there being a thin scar-line with bluish mark in the centre, to show the site of the injury.

As a mere record of a case of bullet wound of the skull this case serves of itself to increase but little our knowledge of the surgery of the head. And it is quite possible that many who read the account of the case will say that with such a small missile recovery would have followed with equal readiness had the policy of non-interference been followed. That is possible, but by the operation we were enabled to effect a thorough examination of the wound, remove part of the foreign body and some fragments of bone, to ascertain that the bullet had penetrated the membranes, excise some of the blackened skin and the track injured by the bullet in its progress through the soft parts. Several cases have come under my observation during the past twelve years which have caused me to hold most strongly the opinion that a surgeon should operate in all cases of bullet wound of the skull, provided the injury is not immediately fatal or likely soon to be so from the shock. If it is necessary to trephine in a punctured fracture of the skull, and this is universally admitted, much more so is it necessary to operate when a wound of similar character is produced by a body, which not only lodges but produces contusion of the edges of the wound, with a great tendency to suppuration of the track, especially that part of it which is accessible.

There may be no symptoms of cerebral injury, beyond the presence of considerable shock, and this is not necessarily a sign of injury to the brain, for in one case where an old man had attempted suicide by shooting himself in the temporal region with a small revolver, there was much shock, and it was thought that the bullet had penetrated, but at the operation it was found by Mr. Sydney Jones that the bullet had not penetrated, but was lying under

the temporal muscle. I showed a bullet at the Pathological Society which had been removed from the forehead of a man by Mr. Croft. This man had tried to shoot himself with a revolver, the bullet although fired at close quarters had not penetrated but become flattened out against the bone. Again in cases of non-interference, in one case followed by fatal cerebritis the bullet was found at the post-mortem in an abscess cavity close to the surface. Another patient ultimately died from cerebral abscess, the result of local irritation, apparently not caused by the bullet but by the injured bone and membranes. And another had traumatic epilepsy, the result apparently of irritation from depressed fragments of bone and adherent membranes, for he improved greatly after the freeing of these from the surface of the brain and the removal of portion of the bullet which had lodged near them. This operation was, however, done many months after the first admission. The principles of operation which guide me are to make an incision down to the opening in the skull, placing it, if possible, within the margin of the hairy scalp, so as to avoid unnecessary scarring afterwards; to trephine or remove bone sufficiently to permit of a thorough examination of the parts under the point of fracture. Careful examination of the brain underneath with a bougie or probe, no force being used. Removal of all splinters or foreign bodies, excision of the bullet track, accurate adaptation of the edges of the wound, the provision of *oblique* drainage, that is, the placing of the tube so that any fluid is carried off under, not through the incision, and the employment of an efficient antiseptic.



CRANIO-TABES IN YOUNG CHILDREN.

A CLINICAL INQUIRY INTO ITS ORIGIN.

ILLUSTRATED BY 100 CASES.

BY GEORGE CARPENTER, M.D., M.R.C.P.

IN vol. xxxii of the 'Pathological Society's Trans.,' included in a discussion on rickets, is a paper by Drs. Lees and Barlow on the "Relationship of Cranio-tabes to Rickets and Congenital Syphilis." After referring to the fact of Elsässer of Neuenstadt (who originally described the affection) having looked upon cranio-tabes as a manifestation of rickets, they proceed to state the result of their own observations on this subject. They analysed 100 cases, and arrived at the conclusion that forty-seven of these were undoubtedly syphilitic; on the other hand, though fifty-three cases showed some signs of rickets, yet, as the writers point out, this in all probability was due to the feeding, as it was found in these cases the diet was at fault. As the writers say, "a syphilitic child may be expected to be at least as liable to injury from a faulty diet as a child free from this taint." It is somewhat remarkable that in vol. ii, part i of Keating's 'Cyclopædia of the Diseases of Children' now publishing, Dr. Barlow in writing a part of the article on rickets (in conjunction with Dr. Judson Bury) appears to have completely revised his opinion on this subject; for, making no reference to the expression of views of 1880, he in this article accepts the conclusion that cranio-tabes is a manifestation not of con-

genital syphilis but of rickets. Apparently up to the present time no further observations have been made on this subject, and it may therefore be of interest to record the result of analysis of cranio-tabes occurring in children varying in age from fourteen months to six weeks.

The ages of the cases analysed are as follows :

	Cases.		Cases.
6 weeks	3	6 months	12
7 „	4	7 „	4
2 months	7	8 „	5
10 weeks	1	9 „	9
11 „	3	10 „	4
3 months	13	11 „	3
3½ „	3	12 „	3
4 „	15	13 „	1
4½ „	1	14 „	2
5 „	7		
		Total	100

The situation of the cranio-tabes was :

Behind the parietal eminences, one or both	33
Round about the parietal eminences, one or both	14
Localised behind one or both parietal eminences	11
	— 58
Round about the parietal eminences and in the occiput	13
Round about the parietal eminences and in squamous temporals, one or both	15
Round about the parietal eminences and in squamous temporals, one or both, and in the occiput	7
	— 35
Occipital bone	2
Squamous temporals	1
Not mentioned	1
Neighbourhood of posterior lateral fontanelles	3
	— 7
Total	100

In three instances the parietal eminences were invaded, and in one case at the autopsy the frontal bone was found with commencing cranio-tabetic changes.

It will be seen that in over half the cases, viz. fifty-eight, the parietals were alone affected, in 35 per cent. of the cases

the parietals were involved together with the squamous temporals or the occipitals or both, and in but two instances were the occipitals alone attacked.

Amongst these 100 cases forty-two were obviously rickety. The remainder presented some irregularities of diet in one shape or another, evidences of gastro-intestinal disturbances; some had head sweats and boring of the head on the pillow, others objected to being handled. In all of these, however, the costo-chondral junctions were found to be slightly bossy on careful examination; in other words, they were suffering from rickets in an early stage.

Again, in seventy-four cases the diagnosis of syphilis was certain. Fifteen showed the co-existence of rickets and syphilis in well-marked form. In eight cases the syphilitic evidence was nil, and there was no history.

Taking, however, the cases of six months and under, the direct syphilitic evidence is much more striking. As many as sixty-one were undoubtedly syphilitic, in six there was some doubt attached, and in two there was no evidence to go upon.

As regards the rickets, for seven months and onwards, the evidence becomes more and more striking with the increasing age of the patient. That is to say, from infancy to six months we find rickets which is not well marked—in the large majority of cases in its earliest stages—and beyond this period rickets which is perfectly well marked and easy of recognition. On the other hand, the syphilitic evidence is of the strongest from birth up to six months of age, and beyond that period it becomes less demonstrable and easy of detection.

Taking the cases of cranio-tabes we find the percentage for six months and under is sixty-nine; in other words, it appears that cranio-tabes is more in evidence the more demonstrable is the syphilis, and the less demonstrable the rickets. We now find ourselves on the horns of a dilemma if we examine these sixty-nine cases, for the whole sixty-nine were probably rickety, and the same may be said with regard to syphilis, for in but two instances could no evidence of any sort be obtained; and the fact that there was no evidence does not prove that they were not syphilitic. At any rate

it is sufficient for our purpose that these cases were both syphilitic and rachitic, with the former in the ascendancy.

In order if possible to solve these difficulties I treated the cases with hydrarg. cum cretâ only, excepting the instances mentioned below.

There is one fallacy however, and that is the mothers were given printed directions as to the feeding, &c., of their infants, so that their dietary and general hygiene were, or should have been, considerably improved.

The table below shows the results of mercurial treatment, and hieroglyphics have been affixed denoting the severity or otherwise of the cranio-tabetic condition.

Cured.

SECTION A.

Case.	Age.	No. of days or months for cure.
1 ...	o 3 months	... 21 days.
2 ...	* 4½ "	... 4 months.
3 ...	† 3 "	... 5 " (nearly).
4 ...	† 11 weeks	... 1 month "
5 ...	† 9 months	... 2 months "
6 ...	* 5 "	... 2 " (over).
7 ...	† 9 "	... 3 "
8 ...	* 6 "	... 4 " (nearly).
9 ...	o 4 "	... 2 " "

Improved.

SECTION B.

Case.	Age.	No. of days or months.
1 ...	† 2 months	... 18 days.
2 ...	† 3 "	... 5 months (nearly well).
3 ...	† 4 "	... 3 weeks.
4 ...	* 5 "	... 3 months nearly (greatly improved).

Cured—Rickets still and subsequently.

SECTION C.

Case.	Age.	Time.	Rickets subsequently.
1 ...	o 6 months	... 49 days	... 4½ months (nearly).
2 ...	o 3 "	... 3 months (nearly)	... 14 days.
3 ...	† 6 "	... 2 " "	... 3 months (over).
4 ...	o 9 "	... 2½ "	... —
5 ...	* 3½ "	... 2 " (over)	... —
6 ...	o 5 "	... 2 " "	... 3 months.

Case.	Age.	Time.	Rickets subsequently.
7 ...	† 6 „	... 6 weeks (nearly)	... 4 „
8 ...	o 6 „	... 13 days	... 14 days.
9 ...	† 4 „	... 5½ months	... 2½ months.
10 ...	o 4 „	... 2 „ (over)	... 14 days.
11 ...	* 10 weeks	... 3½ „	... 5 months (nearly).
12 ...	* 14 months	... 3 „ (over)	... —
13 ...	* 6 „	... 3 „	... 3 months.

Improved—Rickets still.

SECTION D.

Case.	Age.	Time.
1 ...	o 8 months	... 21 days.
2 ...	† 8 „	... 27 „

Note.—* = marked cranio-tabes.

o = localised „

† = moderate „

The column headed “Rickets subsequently” gives the periods during which the cases were under observation, the patients subsequently being lost sight of.

From these tables it will be seen that in nine cases, Section A, the cranio-tabes disappeared in periods varying from twenty-one days to five months, but no fresh notes had been appended as to the increase or decrease of the rickets. Four cases, Section B, showed improvement, in two of them marked; but here again the notes as to the rickety changes are wanting.

Thirteen cases, Section C, showed recovery together with the continuance of the rickets, and in the majority of them the rickets persisted for weeks or months afterwards. It will be noted, however, that even then the patients were well within the cranio-tabetic age. Of these cases the shortest time for a cure of the cranio-tabes was thirteen days, the longest five and a half months.

Two cases were improved, and still rickety when they discharged themselves. In two cases the cranio-tabes increased instead of improving, the child still being rickety.

Taking Section C, the most noticeable fact is that in the cases here enumerated, the rickets persisted in the majority of instances, the cranio-tabes having disappeared.

If cranio-tabes is one of the earliest manifestations of rickets—a manifestation which sometimes takes precedence of the beads on the ribs, or is at the very least co-existent with these—it is a remarkable feature that this condition of things should disappear, leaving the rosary still as evident as ever and the child to all outward appearances as rickety as heretofore, or considerably more so.

Again, if cranio-tabes is an incipient rickety manifestation, an indication that the rickety changes are in early progress, a warning as it were of the faulty processes that are going on (and viewed in this light the cranial bones must be considered a particularly sensitive indicator of the pathological changes in progress within the body), it is reasonable to assume that when the rickety changes are at their highest pitch the wasting of the skull should then in like manner be most marked.

Viewed from this standpoint, it is difficult to conceive how the cranial bones more often claim exemption when the rickets is marked than when in the earliest stages, unless it be that in the younger children there is a thinner plate of cranial bone to deal with, which shows in consequence more readily the wasting process taking place within it.

Sections A, B, and D do not help quite as much, but they show that cranio-tabes will improve or get well under the influence of mercury.

Of course it is quite possible that by improving the general health of the patient the rickets may improve *pari passu*, and that the action of the mercurial is indirect rather than direct.

Of the remaining cases ten died—two of tubercular peritonitis, one of general tuberculosis, three of marasmus, and four of pneumonia. When a post-mortem examination was obtained the evidence of rickets was conclusive. In one of these cases the cranio-tabes was very marked over the temporal, parietal, and occipital bones and involved the frontal bone slightly, the rickets being extreme. This child had tibial nodes.

Thirty-six cases did not attend again, of fifteen there was no record as to the cranio-tabes, and two did not show any improvement.

In three cases the treatment was mixed (mercury, cod-

liver oil, and raw meat), one case still remained rickety and cranio-tabetic, one recovered under cod-liver oil and steel wine (note by clinical clerk), and lastly one treated with mercury for a week was subsequently hunted up by one of the clinical clerks and found to be well.

Another point of difficulty in dealing with these cases is the tendency to the disappearance of the cranio-tabes without any treatment whatever. I have never met with nor read of a case above twenty months of age, however severe the rickets.

I do not confine myself to the narration of these 100 cases, but I have in addition taken haphazard cases of rickets to the number of 100 from my notes in which it has been definitely stated that cranio-tabes was absent, and I could have easily recited another 100 cases in which various notes have been made as to the head, but in which, unfortunately, the negative statement has been omitted. For this purpose none over twenty months of age have been drawn upon.

On enquiry into their histories, a striking feature in regard to these 100 cases was that forty-six pointed to a syphilitic taint in their own persons, or in that of their brothers and sisters or mothers, or a combination of these. Two out of these cases were syphilitic, one had very depressed bridge to the nose, and one an enormous spleen. In twenty-five cases there was no history of syphilis, and in twenty-nine enquiries had not been made pointing to that disease.

In looking over one's notes it is not a difficult matter to find one or two hundred cases of rickets of the prescribed age in which cranio-tabes is absent, but the same cannot be said of the congenital syphilis series, and, roughly speaking, nearly 50 per cent. show this skull change.

Viewed on one side of the artificial dividing line which I have made the evidence is more strongly in favour of syphilis than rickets, and, moreover, the cases occurring at this period are more numerous. Viewed on the other side of the line the evidence is strikingly in favour of rickets. From the evidence, however, that is here presented I do not think it possible to say definitely that cranio-tabes belongs to either syphilis or rickets, and it ought to be considered a moot point as to which of the two diseases can lay claim to it.

It certainly belongs to either one or other of them, but to which it is difficult to say. If I showed any partiality it would be, I think, decidedly in favour of the syphilitic origin of the disease.

Marasmus has nothing to do with cranio-tabes as shown by Drs. Lees and Barlow, and my cases support their conclusions.

The out-patient department of a hospital when dealing with rickety children is so saturated with congenital syphilis, and *vice versâ*, that an enquiry in that direction is extremely difficult, and bears very doubtful fruit.

From the statistics I give it would be possible to argue indefinitely according to fancy as to the ætiological position of cranio-tabes, but we are not in want of arguments so much as definite facts, and the only satisfactory way of settling this knotty question is by a direct appeal to rickety animals, for syphilis cannot obscure or hide any enquiry in that direction. If cranio-tabes is found not to be a sign in these I should certainly incline very strongly to the syphilitic origin of the disease in the human being.

Although this paper has not thrown any great additional light on cranio-tabes as I had hoped would have been the case, yet I think it shows one point very clearly, viz. that syphilis has much to answer for in the causation of rickets.

That rickets is not an evidence of syphilis as M. Parrot supposed to be the case there can be no doubt, but there likewise is no doubt that it is a very powerful agent in the inducement of that disorder.

Again it shows that mercurials are powerless in the treatment of rickets, and that the chief site for cranio-tabes is in the parietals in the neighbourhood of the parietal eminences, and not in the occipital bones as some of the text books state.

Contrary to the opinions of some observers that cranio-tabes goes with laryngismus stridulus, one only of my cases suffered from that affection. One child had tetany, and two were subject to eclampsia. In several of the cases the presence of cranial osteophytes was noted, and one of them had a sister suffering from the latter condition.

AN ANATOMICAL NOTE

UPON THE RELATION OF THE

INTERNAL CAROTID ARTERY TO THE INNER WALL OF THE TYMPANUM.

By WILLIAM ANDERSON, F.R.C.S.

THE relation of the tympanum to the internal carotid artery has attracted little attention from anatomists, although otologists have long been aware of the danger of implication of the vessel in diseases of the middle ear. In examining a number of temporal bones I have been struck by some topographical details which appear to be of practical importance to the surgeon.

Text books of anatomy, when referring to the carotid artery in the description of the middle ear, place the vessel amongst the anterior relations of the cavity. This is, however, scarcely accurate. The carotid canal at its proximal extremity lies on the inner side of the tympanum as well as on a plane anterior to it, and runs upwards in a nearly vertical direction, about as far as the junction of the lower third with the upper two thirds of the inner wall of the cavity, closely approaching it, then bends inwards and forwards in a nearly horizontal direction forming an angle of about 45° with the frontal axis of the cranium, to reach the cavernous groove in the sphenoid; but the angle of flexion always lies in close proximity to the anterior and inferior portion of the inner wall of the tympanum.

In the great majority of cases the artery lies in a plane sufficiently anterior to that of the cavity to be in front of a line joining the two external auditory meatus, and a pointed instrument thrust into the ear along the frontal axis of the cranium might pass through the tympanum, the vestibule, and the internal auditory meatus, and continuing its course across the front of the posterior fossa might traverse in reverse order the parts of the opposite auditory capsule to emerge on the other side of the head, the two carotids lying unhurt in front of the penetrating body.¹

In certain cases, however (about 10 per cent.), the flexure of the carotid canal passes a little farther backward than usual, and lies directly behind the anterior inferior portion of the inner wall of the tympanum and in such a

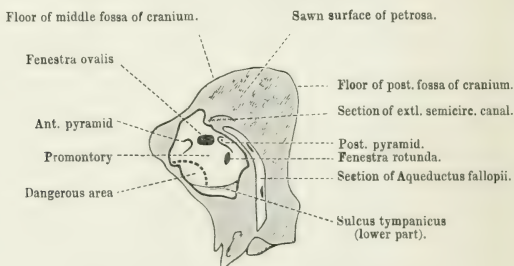


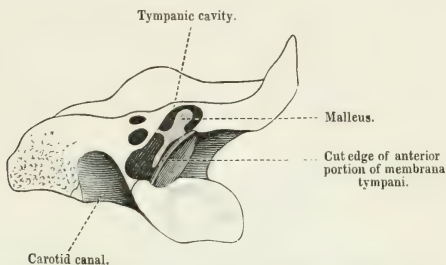
Diagram of Inner Wall of Tympanum.

position that a pointed instrument entering the middle ear through the external meatus might pierce the bony septum between the canal and tympanum, and when it is very thin, or perforate, as occasionally happens, a surgeon in incising the membrana tympani for the evacuation of pus might wound the vessel were he to choose the anterior

¹ Such a course we may imagine was followed by the nail with which Jael pinned the head of the sleeping Sisera to the earth. In a patient seen by myself in consultation several years ago an instrument had passed through the ear deep into the brain in the same direction, encountering very little resistance in its path. This remarkable relation of the parts of the auditory apparatus to the frontal axis of the cranium is often demonstrated unintentionally by the dissector in sawing through the base of the skull for the purpose of separating the portion bearing the pharynx from the occipital region.

inferior segment for his puncture. It must be remembered also that the extension of tubercular disease of the tympanum to the arterial channel is favoured by such a tenuity of the bony septum.

The latter danger is well known to aural surgeons, but I have only been able to find the report of a single case in which

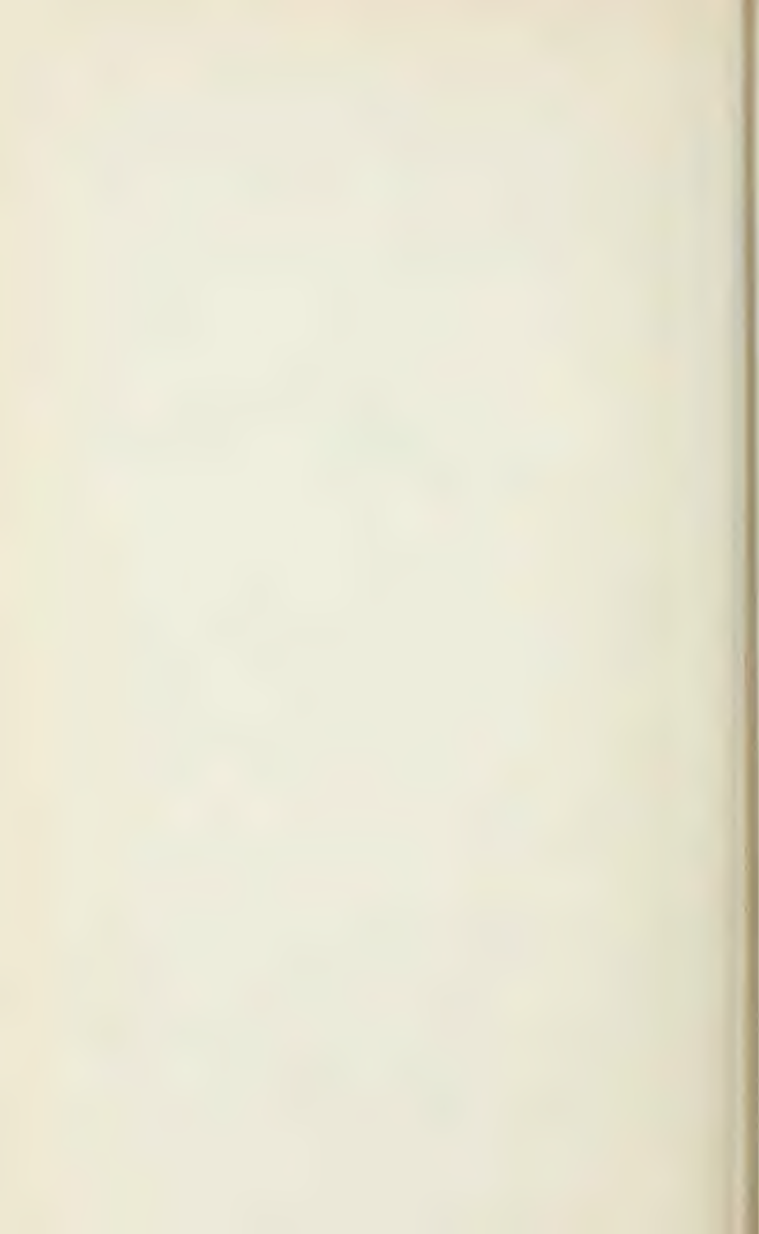


Section of a Temporal Bone showing relation of Tympanum to Carotid Canal.

copious hæmorrhage resulted from a surgical incision of the membrane, and even here the source of the bleeding remains doubtful, since the membrane is said to have been pierced in its *posterior* inferior segment.¹ The lack of record, however, does not prove that the accident has never occurred. At any rate the contingency is always possible, and the possibility should lead the surgeon to regard the anterior inferior segment of the membrane as tabooed for therapeutic puncture.

The figures will serve to illustrate the relation in question.

¹ "The incision was made in the posterior inferior segment, and the blood poured out so abundantly that it looked as if a large vein had been wounded. The canal was at once tightly plugged, but the bleeding continued for some minutes, forcing out the plug. It only ceased after the canal was packed with cotton-wool soaked in perchloride of iron, and this retained for a considerable time with the finger. The patient lost at least ten ounces of blood, and was confined to bed for a week on account of weakness. The hæmorrhage did not recur, and no unpleasant consequences ensued. Some months after, however, a livid spot could be seen on the posterior inferior segment of the membrane . . . Whether the spot was due to a clot in the tympanum or to some anomalous condition of the tympanic membrane (telangiectasis) could not be determined" ('Gruber,' p. 384).



AN ANALYSIS OF 708 CASES

OF

ACUTE PNEUMONIA,

ADMITTED INTO ST. THOMAS'S HOSPITAL DURING THE
ELEVEN YEARS FROM 1880 TO 1890 INCLUSIVE.

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THIS paper is based upon the examination of the cases of acute pneumonia (admitted as such) during the period of eleven years from 1880 to 1890 inclusive. Cases admitted at the latter end of 1879 and discharged or died in 1880 are included. Cases admitted in 1890 and discharged or died in 1891 are not included. No selection of cases was made, though some were rejected in which there appeared to be reasonable doubt in diagnosis. For permission to use the notes of the various cases we are indebted to the physicians of the hospital. Our investigations do not cover, of course, all the details of this disease. It was, for example, considered that no useful purpose would be served by tabulating the occupations of the patients, in view of the fact that they were drawn almost entirely from the same class.

Our observations on temperature, pulse, and respiration have been made on broad principles, as we did not consider

that a minute enquiry into these points would furnish information of value.

Notes do not always supply information on all the points touched upon in this paper. In some cases in which an absolutely misleading inference might be made, we have refrained from generalisation. In others, however, we have drawn inferences from data which, although certainly limited, at all events approach fairly near the truth.

TABLE I.—*Showing the Number of Cases in each Year, Fatal and Non-fatal.*

Year.	Non-fatal cases.			Fatal cases.			Grand total.
	Total.	Males.	Females.	Total.	Males.	Females.	
1880	36	29	7	9	5	4	45
1881	45	33	12	12	11	1	57
1882	52	42	10	4	4	0	56
1883	48	32	16	14	11	3	62
1884	39	23	16	10	7	3	49
1885	34	26	8	13	10	3	47
1886	73	48	25	15	10	5	88
1887	32	25	7	17	14	3	49
1888	58	47	11	13	13	0	71
1889	66	53	13	7	7	0	73
1890	82	68	14	29	24	5	111
	565	426	139	143	116	27	708

TABLE II.—*Table of Ages.*

Date.	Age in years {	Under 2	2-5	-10	-15	-20	-30	-40	-50	-60	-70	-80
1880	Non-fatal	...	3	5	5	6	4	6	6	...	1	
	Fatal	...	...	...	...	...	2	1	2	3	...	1
1881	Non-fatal	...	5	5	7	9	12	2	2	2		
	Fatal	...	...	...	...	2	1	3	3	2	3	
1882	Non-fatal	...	1	2	5	12	17	6	7	2	1	
	Fatal	...	...	...	...	...	3	...	...	1		
1883	Non-fatal	1	3	4	6	6	7	11	6	3	1	
	Fatal	3	...	...	...	...	3	2	5	...	1	
1884	Non-fatal	...	2	3	4	6	9	7	8			
	Fatal	1	2	...	...	...	3	1	1	...		
1885	Non-fatal	...	1	1	4	12	4	4	6	1	1	
	Fatal	1	1	...	...	...	5	4	2			

TABLE II.—*continued.*

Date.	Age in years	Under 2	2-5	-10	-15	-20	-30	-40	-50	-60	-70	-80
1886	Non-fatal	1	6	10	10	13	15	16	3	2		
	Fatal	...	...	...	1	1	2	5	5	1		
1887	Non-fatal	...	2	5	5	6	5	3	1			
	Fatal	...	...	...	...	2	3	4	5	2	1	
1888	Non-fatal	1	7	9	6	10	15	8	2			
	Fatal	...	...	...	...	...	2	6	2	2	1	
1889	Non-fatal	3	11	11	4	13	8	10	3	...	1	
	Fatal	1	...	...	...	...	3	1	...	1	1	
1890	Non-fatal	...	8	4	9	16	23	10	9	2		
	Fatal	...	...	...	...	2	7	10	7	3		
Totals {	Non-fatal	6	49	59	65	109	119	83	53	12	5	...
	Fatal	6	3	0	1	7	34	37	32	15	9	1
Grand total for each year }		12	52	59	66	116	153	120	85	27	14	1

TABLE III.—*Non-fatal Cases.*

FAMILY HISTORY.

Phthisis in one or both parents	.	.	.	.	.	21
Phthisis in other members of family	.	.	.	.	.	55
Bronchitis, "chest" affection, or asthma in parents	.	.	.	.	.	15
Bronchitis, "chest" affection, or asthma in other members of family	.	.	.	.	.	12
"Inflammation of lungs" in father.	.	.	.	.	.	2
"Pleurisy" in father	.	.	.	.	.	1
Rheumatism	.	.	.	.	.	1
Erysipelas, contracted by brother when patient had pneumonia	.	.	.	.	.	1

PERSONAL HISTORY.

Subject to winter cough	.	.	.	.	.	55
Subject to cough, not specially described as winter cough	.	.	.	.	.	65
History of one or more attacks of bronchitis	.	.	.	.	.	28
Previous attacks of "pneumonia" (see Special Report)	.	.	.	.	.	15
Previous attacks of "inflammation of lungs"	.	.	.	.	.	8
Previous attacks of pleurisy	.	.	.	.	.	21
Hæmoptysis	.	.	.	.	.	7
"Delicate chest"	.	.	.	.	.	1
Recent confinement (in two, at least, instrumental)	.	.	.	.	.	5
Suckling	.	.	.	.	.	3
Acute rheumatism	.	.	.	.	.	40
Gout	.	.	.	.	.	1
Erysipelas, two attacks	.	.	.	.	.	1

*Fatal Cases.**History complete in 121 cases.*

FAMILY HISTORY.

Phthisis	24
Other lung troubles	19

PERSONAL HISTORY.

Acute bronchitis	8
Chronic bronchitis	3
Winter cough	13
Cough, not specially described as winter cough	15
Previous attacks of pneumonia	5
Previous attacks of pleurisy	7
Acute rheumatism	13

General Results of TABLE III in Percentages.

FAMILY HISTORY.

Phthisis only in non-fatal cases	13·4
Phthisis and other forms of chest affection	18·7
Phthisis only in fatal cases	19·8
Phthisis and other forms of chest affection	35·5
Phthisis only in fatal and non-fatal cases	14·
Phthisis and other forms of chest affection	21·

PERSONAL HISTORY.

Chest affection in non-fatal cases in	35·4
Chest affection in fatal cases in	42·
Chest affection in both non-fatal and fatal cases in	36·5

It will be seen from the above, that, taking the total number of cases, fatal and non-fatal, there is a family history of phthisis or other form of chest affection in 21 per cent., a proportion probably excessive. But whether this be excessive or not, the percentage of chest affection in the fatal cases is as high as 35·5, that is more than half as large again as in the non-fatal cases. With the exception of lung mischief the family history table presents no points which call for comment.

With regard to personal history, it seems clear that the proportion of 36·5 per cent. of chest affection in the total number of cases is an element of importance as a predisposing cause, and the fact that in the fatal cases the percentage of such a history is as high as 42 suggests that antecedent

lung trouble must be considered as having some prognostic gravity.

There was a history of acute rheumatism in 40 cases, but of gout in only one. It will be seen, however, on referring to the "complications" of fatal cases (Table XV), that direct evidence of gout was found post-mortem in eight instances. It is possible also that gout may have some influence as a predisposing cause, in view of the fact that chronic interstitial nephritis was proved to be present in twenty out of 128 cases which were examined post-mortem. In five cases the pneumonia followed on confinement, and in three occurred during the period of lactation.

Of the twenty cases in which a previous attack of "pneumonia" was alleged to have occurred, the history has been verified from the hospital records in twelve cases, of which an account is appended.

H. B—, female, æt. 17, admitted under Dr. Ord, October 10th, 1881, discharged cured November 13th. Her mother died of phthisis. The patient was subject to cough. Her attack began suddenly four days before admission, and she was found on examination to have pneumonia affecting almost the entire left lung. There was a marked crisis on the fifth day. She was admitted for the second time on August 14th, 1885, under Dr. Stone, and was discharged cured on September 16th. Both lower lobes were affected. There was no marked crisis.

A. J—, male, æt. 21, admitted under Dr. Ord, July 13th, 1881, discharged cured August 3rd. There was pneumonia of the right lower lobe, and there was a crisis on the sixth day. He was admitted again on October 14th, 1885, under Dr. Harley, and discharged cured. The left lower lobe was affected. There was no crisis.

W. E—, potman, æt. 21, was admitted under Dr. Harley, March 3rd, 1882, discharged cured March 30th. There was typical acute pneumonia affecting right lower lobe. The attack ended by a crisis. He was again admitted on December 12th, 1883, under Dr. Bristowe, and discharged

cured on December 27th. He then had pneumonia affecting the right lower lobe, and the lower part of the right upper lobe. There was a marked crisis on the seventh day.

G. C—, æt. 27, carman, was admitted to Arthur Ward under Dr. Stone on June 28th, 1882. His mother had died of bronchitis, and the patient had had previous attacks affecting the lungs, for which he had been treated in Lambeth Infirmary and Charing Cross Hospital. When admitted he was suffering from signs of pleuro-pneumonia at the right base, and from general bronchitis; there were patches of tubular breathing over his left lung. He was discharged cured on July 27th.

Re-admitted December 31st, 1882, and died January 2nd, 1883. He was found, post-mortem, to have acute pneumonia affecting the upper lobe of the right lung. The lower lobes and the left lung were healthy.

J. B—, æt. 36, labourer, was admitted under Dr. Ord on May 2nd, 1879. Nothing noteworthy in family or personal history. He was suffering from pleuritic effusion and consolidation at the base of the left lung. He was discharged cured.

Re-admitted November 26th, 1883, and died December 5th. He had signs of acute pneumonia at the right base. There was no post-mortem examination.

W. L—, æt. 17, plumber's labourer, was admitted November 13th, 1887. He had been taken ill suddenly on the 11th with shivering, pain in the left side, and difficulty in breathing. On admission there were typical signs of pneumonia at the left base. The duration of the illness was, however, unusually protracted. The whole of the left lung became involved. Signs of dry pleurisy developed on the right side. For some six weeks the temperature was hectic. On the 12th of December the sputum was found to contain tubercle bacilli, previous examination having given negative results. Towards the end of December the temperature became normal and continued so until the patient left on February 16th, 1888. The last note of the physical signs

was made on January 26th. There was then slight impairment of resonance over the lower part of the left lung with moist crepitations and increased vocal fremitus and resonance over the same area. The patient went to a convalescent home and was reported as having made a good recovery. He still, however, continued to suffer from cough.

In April, 1890, he was treated at a dispensary for pleurisy and bronchitis and was unable to work for three months.

On August 18th, 1890, he was re-admitted with the history that the previous day he had been taken suddenly ill with pain in the left side of the chest and back. He had fever for seven days. It was noted on admission that there were crepitations over the lower part of the left lung. The expectoration was scanty and rusty. He had herpes about the mouth. Typical signs of pneumonia developed at the right base, which subsequently cleared up. The notes are imperfect in regard to the state on leaving.

H. H—, æt. 29, omnibus driver, admitted May 2nd, 1890, with pneumonia at left base. Remained in hospital thirty-three days, and left cured. Re-admitted November 10th, 1890, with typical attack of right apical pneumonia; left on December 2nd cured. He had had several attacks of acute rheumatism and had a mitral systolic murmur.

C. W—, æt. 21, baker, admitted September 19th, 1890, with pneumonia at left base. Remained in hospital eighteen days, and left cured. Re-admitted January 15th, 1891, with right apical pneumonia, and left cured after seventeen days.

C. P—, æt. 5, admitted March 25th, 1890; ill two days with typical pneumonia at left base. Remained in hospital twenty-two days and left cured. Re-admitted August 8th, 1890, with right apical pneumonia; ill four days before admission. Left cured August 24th, 1890.

W. F—, æt. 6, was one of a family admitted with pneumonia in the beginning of May, 1889, the left base being then affected. On September 22nd, 1890, he was re-admitted with a typical attack of pneumonia of left base; onset, two days before admission. He left cured on October 5th, 1890.

W. J. N—, æt. 6, admitted January 3rd, 1887, with pneumonia at right base. He left cured on January 23rd, 1887. He was re-admitted on November 23rd, 1888, with typical pneumonia of left upper lobe, and left cured on December 12th.

A. P—, æt. $2\frac{1}{2}$, was admitted on July 26th, 1888, with pneumonia of right apex and left cured on August 13th. Re-admitted May 8th, 1890, with pneumonia of right base, and left cured on May 21st.

Cases of pneumonia in which two or more persons in the house were attacked.

S. C—, male, æt. 19, admitted under Dr. Ord, December 28th, 1888, discharged cured January 15th, 1889. He was attacked suddenly three days before admission with hæmoptysis, diarrhœa, and headache. He was found to have pneumonia at the left base, which ended by crisis on the fifth day. There was no suspicion of enteric fever.

J. C—, male, æt. 18, a cousin of the above, lived in the same house. He was taken ill on December 26th, admitted on December 29th, 1888, and discharged cured January 16th, 1889. There was pneumonia of the right upper lobe. There was a marked crisis on the sixth day.

M. F—, female, æt. $3\frac{1}{2}$, was attacked with pneumonia at the right base on April 27th, 1889. There was a crisis on the fifth day.

W. F—, male, brother of the above, æt. 6, was seized on May 1st with pneumonia at the left base. There was a crisis on the sixth day. This child was admitted in 1890 with a second attack of pneumonia (see above).

B. F—, female, sister of the above, æt. $2\frac{1}{2}$, was attacked May 3rd. There was pneumonia of the right base and apex. There was a crisis on the third day.

TABLE IV.—*Antecedent Conditions.*

- i. Alcohol.—Non-fatal cases—30. Fatal cases—31.
- ii. Attributed to "cold"—50 [non-fatal and fatal cases].

iii. Attributed to "wet" (including immersion)—49 [non-fatal and fatal cases].

iv. Attributed to "injury"—17 [non-fatal and fatal cases].

Nature of injuries:

Blow from hammer on the side	1
Fractured ribs	1
Blow on side 24 hours previous to onset	1
Fall 24 hours previous to onset	1
Concussion on day of admission	2
Fall on head 2 days before onset	1
Fall when wrestling	1
Symptoms date from a kick by a horse in the side	1
Symptoms date from a blow by hammer in præcordial region	1
Fall on left side the day before admission	1
[In the two last cases there was marked pleuro-pericardial friction.]	
Assault by roughs 2 days before admission	1
Not specified	5

v. Mitral disease—19.

vi. Irregular heart—3.

With regard to antecedent conditions, one point comes to the front with great prominence. Of sixty-one cases in which a history of alcoholism was recorded, as many as thirty-one were fatal, that is rather more than half. This clearly points to alcohol as being a potent element in mortality. Cases attributed to "cold" and "wet" were, comparatively speaking, few. In those attributed to "injury," the nature of the injury has, as far as possible, been tabulated, showing that in a large proportion the situation of the injury corresponded fairly closely to the seat of lesion. Attention must be called to the personal history of acute rheumatism in Table III in connection with the numbers quoted in Table IV as suffering from antecedent cardiac disease.

TABLE V.—*Mode of Onset.*

	Non-fatal cases.	Fatal cases.	Total.	Percentage on total number of cases.
Vomiting	210	24	234	33
Rigor	225	48	273	38.5
Pain in chest or side	353	54	407	57.4
Cough	169	26	195	27.5
Headache	126	12	138	17.75
Diarrhœa	32	11	43	6
Fit (ages 46, 5½, 4, 1)	4	0	4	.59
Hæmorrhage	18	2	20	2.8

TABLE VI.—Date of Onset. (*The letter F. means Fatal.*)

Days.....	January.				February.				March.				April.				
	1-7	8-14	15-21	22-	1-7	8-14	15-21	22-	1-7	8-14	15-21	22-	1-7	8-14	15-21	22-	
1880	F. 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Onset doubtful.—April, 1.
1881	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1882	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. March, 2; April, 2.
1883	F. 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1884	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. Jan., 1; Feb., 3; Mar., 1; Apr., 3.
1885	F. 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1886	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. March, 1; April, 2.
1887	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1888	F. 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. March, 1; April, 2.
1889	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1890	F. 3	F. 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. Jan., 2; Feb., 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Fatal . . .	8	4	2	4	3	1	1	2	3	2	1	4	2	1	3	4	Jan. Feb. March April Onset } 2 0 1 1 doubtful } 3 5 5 9
Non-fatal	6	7	10	8	4	9	5	7	13	12	12	20	8	13	13	12	
Fatal . . .	20				7				11				11				17
Non-fatal	34				30				62				55				
Mortality per cent.	37				19				15				17				

Days.....	May.					June.					July.					August.					
	1-7	8-14	15-21	22-		1-7	8-14	15-21	22-		1-7	8-14	15-21	22-		1-7	8-14	15-21	22-		
1880	...	...	F.1	2	...	...	...	F.1	2	...	...	...	...	...	...	...	...	F.1	1	...	F. May, 1.
1881	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Onset doubtful.—June, 1; July, 2; Aug., 1.
1882	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	F. May, 1.
1883	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. May, 1; Aug., 1.
1884	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. June, 3; Aug., 1.
1885	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. F. Aug., 1.
1886	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. May, 1.
1887	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	F. May, 2.
1888	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. May, 1; June, 1; Aug., 1.
1889	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	F. May, 1; June, 2; Aug., 1.
1890	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. May, 2; June, 2; July, 5; Aug., 1.
Fatal.	6	3	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Do. May, 1.
Non-fatal	17	13	20	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Onset } doubtful }
Fatal.	11	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	May } June }
Non-fatal	52	69	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	May } June }
Mortality per cent.	18	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Onset } doubtful }

Days.....	September.			October.			November.			December.			Onset doubtful.—F. Nov., 1. Do. Sept., 1. Do. Sept., 2; Oct., 1; Nov., 1. Do. Sept., 1; Nov., 1; Dec., 1. F. Sept., 1. Do. F. Dec., 1. Do. Oct., 1; Nov., 2. Do. Sept., 2; Oct., 1.
	1-7	8-14	15-21	22-	1-7	8-14	15-1	22-	1-7	8-14	15-21	22-	
1880	1	2	...	1	...	...	...	...	1	...	2	...	...
1881	...	...	1	...	F. 1	...	2	F. 1	...	...	...	...	...
1882	1	1	...	3	...	1	1	...	...	...	...	...	...
1883	...	...	...	1	...	F. 1	1	...	...	...	...	...	...
1884	2	1	1	F. 1	...	...	...	...	...	...	...	...	...
1885	...	1	1	...	...	...	...	...	...	...	...	...	...
1886	...	3	1	5	...	F. 1	2	...	...	...	...	...	...
1887	...	...	...	...	...	F. 1	2	...	...	...	...	...	...
1888	1	1	2	...	...	...	...	...	...	...	...	...	...
1889	1	2	3	1	...	F. 1	2	...	...	...	...	...	...
1890	F. 1	F. 1	...	...	...	...	...	...	...	...	...	...	...
Fatal . . .	1	1	0	1	...	...	...	...	...	...	...	...	...
Non-fatal	10	14	11	15	...	...	...	...	...	...	...	...	...
Fatal . . .	...	44	...	...	...	...	...	...	...	...	...	...	...
Non-fatal	...	56	...	...	...	...	...	...	...	...	...	...	...
Mortality per cent.	6.6			22			20			22			...

Onset }
doubtful }
Sept. 1 6
Oct. 0 3
Nov. 1 4
Dec. 1 1

Mortality.

It will be seen from Chart I that under the age of two the mortality was as much as 50 per cent., but inferences must be drawn cautiously from this in view of the small number of cases admitted at this period of life. Between three and five the mortality was but 5·7 per cent., the total number of cases being fifty-two. Between six and ten it is remarkable that the mortality was absolutely nil in a total of fifty-nine cases. Between sixteen and twenty the mortality was 6 per cent., the total number of cases being nearly double that in the preceding period of life. It is thus worthy of note that between the ages of three and fifteen out of a total number of 177 cases the mortality was but four, giving a percentage of only 2·2, and between three and twenty there were but eleven deaths, giving a percentage of 3·7. Between twenty-one and thirty the mortality rises to 22 per cent., the total number of cases at this period being larger than at any other, as given in the table, viz. 153. Between thirty-one and forty the mortality is 30·8 per cent., the total number of cases being 120. Between forty-one and fifty it is still higher, being 47 per cent., the total number of cases 85, showing a decided decrease on that of the preceding period. Thus we see that between twenty-one and forty the mortality is 26 per cent., and between twenty-one and fifty it is nearly 29 per cent. The percentage of mortality increases rapidly in the next period, being as high as 51, whereas the total number of cases drops to twenty-seven. In the next period, between sixty-one and seventy, the mortality is 65 per cent., the total number of cases being but twelve. In cases, therefore, above fifty the mortality is nearly 60 per cent. One case occurring at seventy-four, which was fatal, is not included in the chart. The average mortality for the whole number of cases was 20·5 per cent., for the males separately 21·4, for the females 16·26.

It will be seen in Chart II how the mortality for certain periods differs much from the average. It rose in 1887 to 35 per cent., while in the latter half of 1888 and the first three quarters of 1889 it never rose above 9 per cent., and, indeed, for the whole year 1889 the average was just 9 per

cent. During 1882 it was only 7 per cent., this low mortality being maintained in each quarter of the year with only slight variation.

Taking the whole eleven years together, the minimum mortality was reached in the month of September. The next least fatal month was March, in which the mortality was 15 per cent. April has a percentage of 17. In June and July the mortality was 18 per cent., in February 19 per cent., in August and November 20 per cent., in October and December 22 per cent. May and January proved the most fatal months, the mortality in the former being 26 per cent., in the latter 37 per cent.

Taking the winter months November, December, and January, there were 159 cases with forty deaths, or 25·1 per cent. mortality. In the spring months, February, March, and April, there were 176 cases with twenty-nine deaths, giving a mortality of 16·5 per cent. In May, June, and July, the summer months, there were 211 cases with forty-five deaths, a percentage mortality of 21·3. In the autumn months, August, September, and October, there were 150 cases with twenty-three deaths, a mortality of 15·3 per cent. This small percentage is mainly due to the exceptionally low rate in September, which is only 6·6.

During January and February, 1890, the period of the influenza epidemic, the number of cases was fourteen, not more than the average for these months, but the mortality was exceptionally high, being 64 per cent., and out of seven cases in January only one recovered, and in February three were fatal out of seven. From October 15th to November 15th of this year there were 10 cases with five deaths, but during the rest of the year the mortality was not above the average, although the number of cases was very large.

TABLE VIIA.—Duration of Fever in Non-fatal Cases.

Days before admission.	Total number of days of fever.																Above 16 days.	Total number of cases.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
i	...	...	4	1	9	4	1	2	2	1	3	1	...	1	...	...	4 (22, 43, 45, 54 days)	33
ii	...	...	1	9	16	8	6	4	4	3	...	...	...	...	1	...	3 (22, 28, 36 days)	55
iii	...	...	2	8	23	15	14	6	3	2	2	3	1	...	1	...	5 (23, 46, 49, 79, 79 days)	87
iv	...	...	...	4	8	11	20	7	11	3	2	1	...	2	1	...	2 (17, 34 days)	72
v	...	...	...	...	10	14	25	12	7	3	5	1	1	2	1	...	4 (17, 20, 22, 29 days)	85
vi	...	...	...	...	...	6	6	10	7	2	...	2	...	2	1	...	2 (23, 54 days)	38
vii	...	...	...	...	...	...	7	10	13	4	4	4	...	2	1	...	3 (17, 24, 25 days)	49
viii	...	...	...	...	...	...	...	2	4	1	2	...	3	...	...	1	1 (30 days)	15
ix	...	...	...	...	...	...	...	1	2	1	2	...	2	...	1	...	1 (22 days)	10
x	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	1 (17 days)	4
xi	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2
xii	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 (18 days)	1
xiii	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	2 (19 days)	3
xiv	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1 (18 days)	8
xv	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1 (23 days)	2
xvi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 (23 days)	1
Total	...	...	7	22	66	58	79	54	53	20	22	13	8	14	11	8	31	

TABLE VII B.—Duration of Fatal Cases from the onset of the Disease.

Days	.	.	.	.	.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Total number of cases	.	.	.	.	.	0	1	3	2	13	16	18	14	11	8	6	8	1	3	2	0	0	0	1

Table VII has been drawn up to see if any relation could be discovered between total length of the fever and the period of duration before the patient was admitted to the hospital. The majority of cases had received no treatment before admission, and it appears from these figures that early treatment has little influence in shortening the attack. The only special point is that while the greater number of those admitted before the fourth day had a duration of five days, those admitted between the fourth and sixth days more commonly lasted seven days. The highest rate of mortality falls between the fifth and the eighth days, more than half the fatal cases occurring during this period.

TABLE VIII.—*Highest Temperatures in Non-fatal Cases.*

Above 105° F.	.	.	.	.	.	63 cases
(including one case of 106·6° and one of 106°).						
104·9°—104°	.	.	.	.	.	182 „
103·9°—103°	.	.	.	.	.	168 „
102·9°—102°	.	.	.	.	.	60 „
101·9°—101°	.	.	.	.	.	21 „
100·9°—100°	.	.	.	.	.	26 „
99·9°— 99°	.	.	.	.	.	13 „
Below 99°	.	.	.	.	.	3 „

In a large number of cases the highest temperature was observed at the time of admission. The result of our enquiries in this direction show that this was so in one third of the cases.

Highest Temperatures in Fatal Cases.

105° or above	.	.	.	.	.	24 cases
(including one case of 108·8°, one of 108·4°, two of 108°, one of 107·6°, two of 106·4°, and one of 106·2°).						
104·9°—104°	.	.	.	.	.	32 „
103·9°—103°	.	.	.	.	.	39 „
102·9°—102°	.	.	.	.	.	17 „
101·9°—101°	.	.	.	.	.	7 „
100·9°—100°	.	.	.	.	.	2 „
99·9°— 99°	.	.	.	.	.	1 „

In the fatal cases the temperature was noted to be highest at the time of admission in three fifths of the cases.

There were ten cases having a temperature of 106° or more, only two of which recovered. No case recovered with a temperature over 106·6°. We may observe that the mortality of those cases in which the highest temperature was between 104° and 105° was actually lower than that in the series in which the highest temperature was between 103° and 104°. Of the cases in which the highest temperature was not above 101°, the mortality was decidedly low, only three cases proving fatal out of forty-five.

TABLE IX.—*Pulse and Respiration.*

NON-FATAL CASES.			
Average pulse rate	.	.	115
Average respiration	.	.	41
Ratio of pulse to respiration	.	.	2·14 to 1
FATAL CASES.			
Average pulse rate	.	.	136
Average respiration	.	.	52
Ratio of pulse to respiration	.	.	2·59 to 1

In compiling these figures only those cases are included in which the rate of both pulse and respiration was noted and recorded. Where several such observations were made the highest figures were taken. It will be noted that there is not only a considerable increase in frequency in both pulse and respiration in the fatal as compared with the non-fatal cases, but that the ratio of pulse to respiration is also greater. The figures are derived from the records of 372 non-fatal and 97 fatal cases.

TABLE X.

	Non-fatal cases.		Fatal cases.
<i>Herpes.</i> —Present	.	142	19
Noted absent	.	50	0
<i>Tongue.</i> —Dry	.	63	49
Furred	.	235	53
Clean	.	23	2
<i>Diarrhœa</i>	.	49	19
<i>Jaundice</i>	.	6	1
<i>Albumin.</i> —Trace	.	155	52
An estimated quantity	.	56	33
Absent	.	238	16

	Non-fatal cases.	Fatal cases.
<i>Chlorides</i> (noted in 184 non-fatal cases and in 36 fatal cases):		
Absent	18	7
Diminished	117	22
Normal	49	7
<i>Sputum</i> .—Blood-stained or rusty	265 ¹	43
Not blood-stained (viscid, tenacious, purulent, &c.)	61	24
Noted absent	62	6

TABLE XI.—Table showing the Ages in the Cases in which there was no *Expectoration*.

Age.	No.	Age.	No.	Age.	No.
1	1	13	5	25	1
2	1	14	0	26	1
3	1	15	3	31	1
4	3	16	2	33	1
5	2	17	4	35	1
6	2	18	0	38	1
7	3	19	6	40	
8	2	20	1	45	1
9	1	21	1	49	1
10	7	22	4	55	1
11	1	23	4	63	1
12	3	24	0		

As regards herpes this was present in larger proportion in the non-fatal than in the fatal cases. In the latter it was noted present in nineteen instances.

Dryness of the tongue was noted in forty-nine fatal cases, that is to say in 44 per cent., whereas in the non-fatal cases the percentage was only 11.

The presence of albumin in the urine was found in a much larger proportion of the fatal than of the non-fatal cases, and the absence of albumin was noted in a much smaller percentage of the fatal than of the non-fatal cases. The presence of a trace occurred in 27·4 per cent. of the non-fatal cases, and in 36·3 of the fatal, but the proportions are much more striking when there was an appreciable quantity of albumin present. In the non-fatal cases this occurred in about 10 per cent., in the fatal in 23 per cent.

¹ Including 6 described as "prune juice."

In eighty-nine cases in which there was an estimated quantity of albumin, thirty-three died or nearly 40 per cent. Albumin was noted as absent in 42·1 per cent. of the non-fatal cases, but in only 11·2 of the fatal cases.

The information at our disposal does not enable us to give precise details about the condition of the chlorides in the urine, nor are we in a position to make any inferences with regard to the possible prognostic significance. We may note that in one fourth of the total of observations chlorides were stated to be normal during the active stage of the disease.

It may be noted with regard to sputum, that in those cases in which it was described as "blood-stained" the mortality was 14·3 per cent., while in those described as containing "no blood" the mortality was 28 per cent. Expectoration was noted as being absent in sixty-eight cases. Of these about one third were under the age of ten, nearly one half were under the age of fifteen, and two thirds under the age of twenty. In the total number of cases occurring under the age of ten, the percentage in which expectoration was absent was 18·7; under the age of fifteen the percentage was 18·5, while over the age of fifteen the percentage was only 6·3.

TABLE XII.—*Delirium.*

Totals . . .	Non-fatal cases.		Fatal cases.	
	126	...	70	
Site of lesions associated with delirium:				
Right upper lobe . . .	16	...	6	
Left upper lobe . . .	4	...	6	
Right lower lobe . . .	37	...	15	
Left lower lobe . . .	24	...	5	
Both upper lobes . . .	2	...	1	
Both lower lobes . . .	17	...	2	
Right lung . . .	8	...	15	
Left lung . . .	4	...	3	
Both lungs . . .	2	...	1	
Right upper and left lower lobes . . .	1	...	3	
Right upper and lower lobes . . .	0	...	1	
Right upper and middle lobes . . .	1	...	5	
Right middle lobe . . .	3	...	2	
Right upper and both lower lobes . . .	3	...	0	

	Non-fatal cases.	Fatal cases.
Middle of left lung . . .	3	1
Right middle and left lower lobes . .	1	1
Right middle and lower lobes . .	0	1
Left upper and right lower lobes . .	0	1
Scattered . . .	0	1

From Table XII it was found that while the percentage of delirium in the total number of non-fatal cases was 22·3, the percentage of delirium in cases of affection of one or both apices was but 7·2. Similarly on examining the fatal cases it will be found that the percentage for all this class of case was 49, while it fell to 40·6 where one or both apices were affected. These figures are remarkable in illustrating an extreme divergence from recognised teaching on this subject. They also accentuate the grave prognostic import of the symptom.

TABLE XIII.—*Site in Non-fatal cases.*

	Number.	Percentage.
Right upper lobe . . .	67	12·7
Right middle lobe . . .	7	1·3
Right lower lobe . . .	181	34·2
Right upper and middle lobes . .	1	...
Right lower and middle lobes . .	1	...
Right lung, whole or great part of .	33	6·2
Left upper lobe . . .	18	3·4
Middle of left lung . . .	9	...
Left lower lobe . . .	139	24·4
Left lung, whole or greater part of .	11	2
Both upper lobes . . .	1	...
Both lower lobes . . .	43	8·1
Both lungs (spreading pneumonia) .	5	...
Right lung and left lower lobe . .	1	...
Right upper and both lower lobes .	5	...
Right upper and left lower lobes .	3	...
Left lung and right middle lobe . .	1	...
Left upper and right middle lobes .	1	...
Left upper and both lower lobes . .	1	...
Right lung only involved . . .	290	51·3
Left lung only involved . . .	177	31·3
Both lungs involved . . .	61	10·8
Uncertain . . .	37	6·5

Site in Fatal cases

(including cases in which no post-mortem examination was made).

	Number.	Percentage.
<i>Right lung :</i>		
Upper lobe . . .	19	13·7
Middle lobe . . .	7	5
Lower lobe . . .	25	18·1
Upper and middle lobe . . .	1	...
Upper and lower lobe . . .	1	...
Middle and lower lobe . . .	3	...
All three lobes . . .	28	20·3
<i>Left lung :</i>		
Upper lobe . . .	11	8
Lower lobe . . .	18	13
Both lobes . . .	8	5·8
<i>Double :</i>		
Both upper lobes . . .	2	...
Both lower lobes . . .	8	...
Right upper and left lower lobes . . .	3	...
Left upper and right lower lobes . . .	4	...
Right lung only involved . . .	84	
Left lung only involved . . .	37	
Both lungs involved . . .	17	
Doubtful . . .	5	

Taking the fatal and non-fatal cases together the right lung only was involved in 52·7 per cent., the left lung only in 30·2 per cent., both lungs in 11 per cent., and in 6 per cent. the site was doubtful. Analysing the non-fatal and fatal cases separately it is found that of the non-fatal the right lung only was affected in 51·3 per cent., the left lung only in 31·3 per cent., both lungs in 10·8, and in 6·5 per cent. the site was doubtful. Of the fatal cases the right lung only was involved in 58·7 per cent., the left lung only in 25·7 per cent., both lungs in 11·8 per cent., and the site was uncertain in 3·5 per cent. It may be noted that the percentage of mortality is but slightly above the average when both lungs are affected. Again, as to the extent of the lesion, in 58 per cent. of the fatal cases only one lobe was affected.

It may here be noted that one or both upper lobes only were affected in 16·6 per cent. of the cases, and that the

mortality in these cases was 27·1 per cent. In 62·2 per cent. of the cases there was no affection of the upper lobes, and in these the percentage of mortality was nearly 14 per cent. The upper lobes with one or both lower lobes were affected in 15·1 per cent., and the mortality in these cases was 42 per cent. Thus it appears that the latter class is by far the most fatal; but that the fatality is proportionately much less where the lower lobes only are affected, than where the upper lobes only are affected.

TABLE XIV.—*Post-mortem Appearances.*

Duration in days.	Red hepatisation.	Grey hepatisation.	In part red, in part grey.	Intermediate.	Grey and intermediate.	Consolidated condition not noted.
2	...	1				
3	...	1	1	...	1	
4	...	2				
5	4	3	1	1	...	1
6	4	3	4	2		
7	5	5	2	2	...	1
8	1	7	3	1	1	
9	2	3	2	...	...	2
10	1	3	1	...	...	1
11	2	1	2			
12	2	3	1			
13	1	...	1			
15	...	1				
19	1	1				
23	1	1				
35	...	1				
Doubtful	3	3	...	2	...	2
	27	39	18	8	2	7

Average duration with red hepatisation . . . 9 days.

” ” ” grey ” . . . 9·5 ”

” ” in mixed condition . . . 8 ”

” ” intermediate . . . 6·5 ”

These figures appear paradoxical. That the average duration of cases with red hepatisation should be about the same as those which die with grey hepatisation is not what one would expect from the usual teaching that the grey is a later condition than the red. It is still more surprising to find the average duration actually less when the lung is in the

mixed and intermediate condition. We can offer no explanation of this anomaly, and it opens up the question as to whether the relation between the two forms is such as is usually taught. It is worth noting that those of actually shortest duration were in the condition of grey hepatisation.

TABLE XV.—*Complications and Coincident Conditions.*

NON-FATAL CASES.	
Laryngitis	1
Bronchitis	6
Pleurisy (on opposite side, apparently not combined with pneumonia) .	11
Empyema (on pneumonic side)	6
Pleuritic effusion on pneumonic side; paracentesis; serous fluid evacuated	2
(?) Phthisis	3
Pericarditis	5
Acute rheumatism ¹	2
Tonsillitis (at onset of pneumonia)	2
Epistaxis (at onset)	2
Swelling of ankle	1
Effusion into knee-joint; (?) gout	1
Acute nephritis	2
(?) Plumbism	1
Gout in convalescence	1
(?) Pregnancy	1
Phlebitis (2 during attack, 1 during convalescence)	3
Hyperpyrexia (above 106° F.)	2
? „ (above 105° F., in which the symptom was specially treated)	5

FATAL CASES.

There were 143 fatal cases, in 128 of which a post-mortem examination was made.

Pleurisy on opposite side without pneumonia	14
Fibrinous exudation in bronchi	1
Emphysema	1
Pericarditis	14
Mitral valvular disease	2
Thrombosis of pulmonary artery	1
Ulcerative endocarditis of tricuspid valve	1
Acute nephritis	1
Large pale kidney	1
Chronic interstitial nephritis	20

¹ One admitted with acute rheumatism and pneumonia; in the other the acute rheumatism followed the pneumonia.

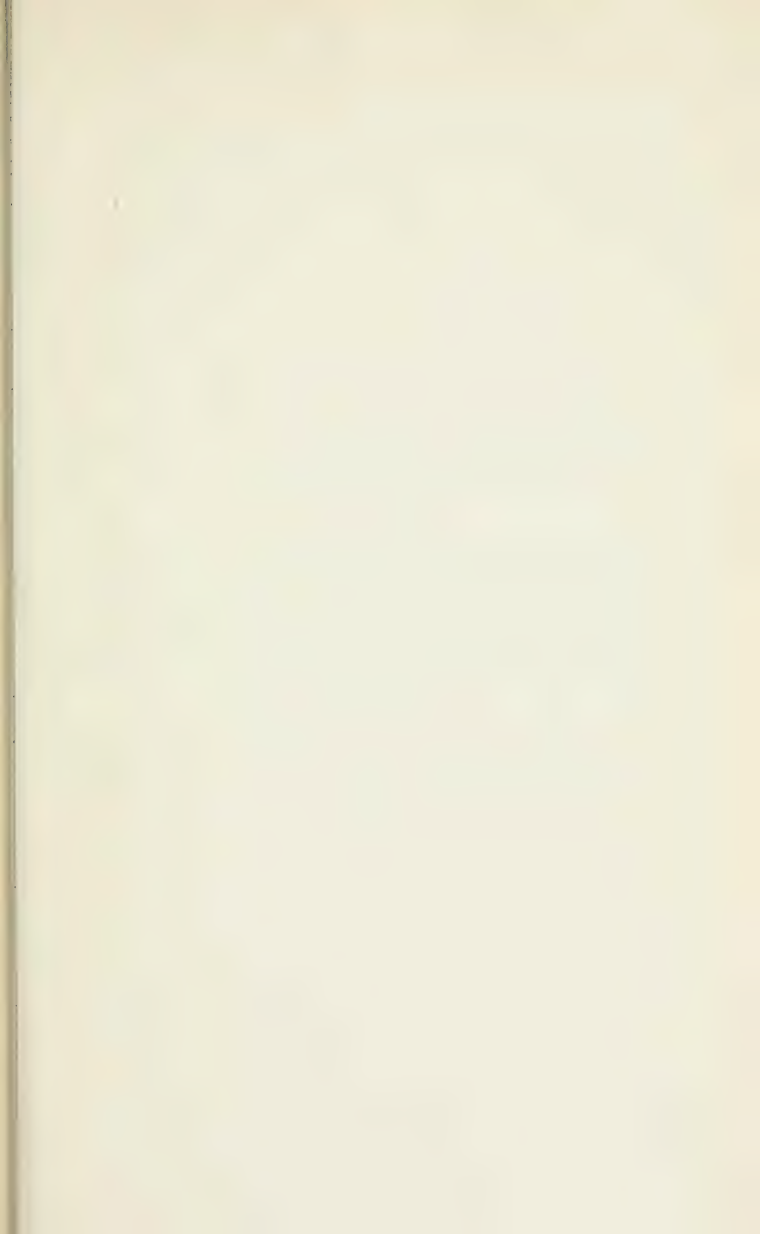
Renal calculus	2
Abscess in left kidney	1
Gout	8
Cirrhosis of liver	1
Hyperpyrexia (above 106° F.)	8
Pregnancy; miscarriage before death	1
(?) Recent delivery	1

TABLE XVI.—*Day of Crisis (Non-fatal Cases).*

Day.	Number.
iii	3
iv	18
v	62
vi	44
vii	59
viii	33
ix	23
x	10
xi	7
xii	4
xiii	3
Marked crisis, day uncertain	37
Fall of temperature gradual	167
Doubtful	95

It appears from the above table that in 53·6 per cent. there was a marked crisis, that is to say, the temperature fell from above 100° to normal in twenty-four hours, and afterwards remained normal or sub-normal. This definition of crisis is arbitrary on our part, and many other cases might have been described as ending with crisis had this term been given a somewhat wider extension as regards the period over which defervescence took place. According to our return crisis is most common on the fifth and seventh days, there being but little difference in the number of cases in each. No less than 40 per cent. of the total occurred on one or other of these days. Nearly three quarters of the whole number occurred on or before the eighth day.

It may be mentioned here that we are not in a position to give any information of importance with respect to so-called critical discharges.



DESCRIPTION OF PLATES III AND IV,

Illustrating Paper on Acute Pneumonia by Drs. Hadden,
Hector Mackenzie, and W. W. Ord.

PLATE III.

Chart I shows the relation between the number of cases and the mortality per cent. at each period of life.¹

Chart III shows the number of cases having their onset in each year, with the mortality per cent. The rate of mortality will be seen to be low in 1882 and 1889, high in 1885 and 1887. The chart also shows that the maximum number of cases occurred in 1890, and that the number in 1886 was much above the average.

PLATE IV.

Chart II shows the total number of cases for the eleven years 1880 to 1890 inclusive, the onset at the various periods of the year, and the mortality per cent.

¹ In Chart I the ages should be 2—5, —10, —15, &c.

CHART I.

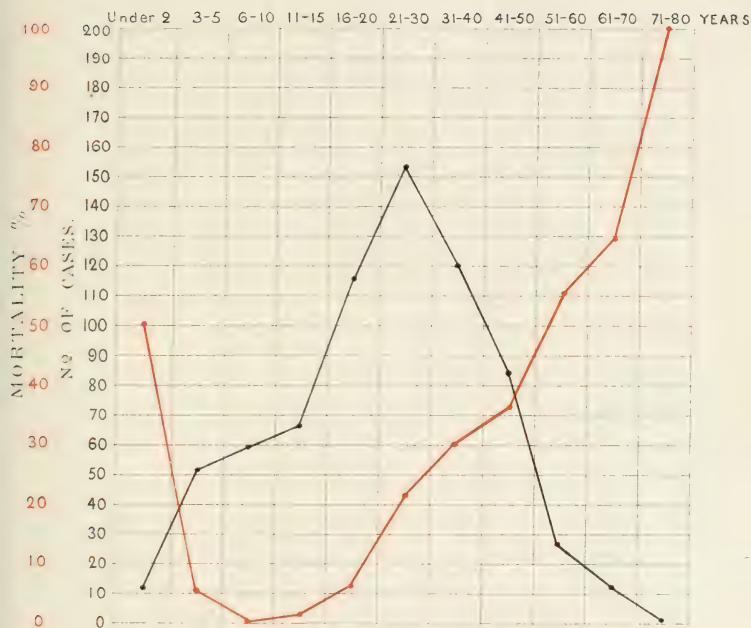
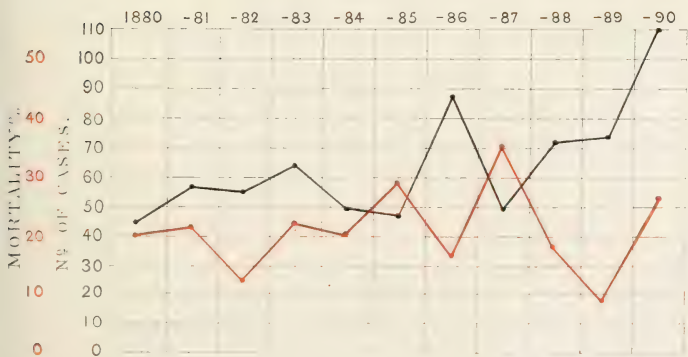


CHART III.



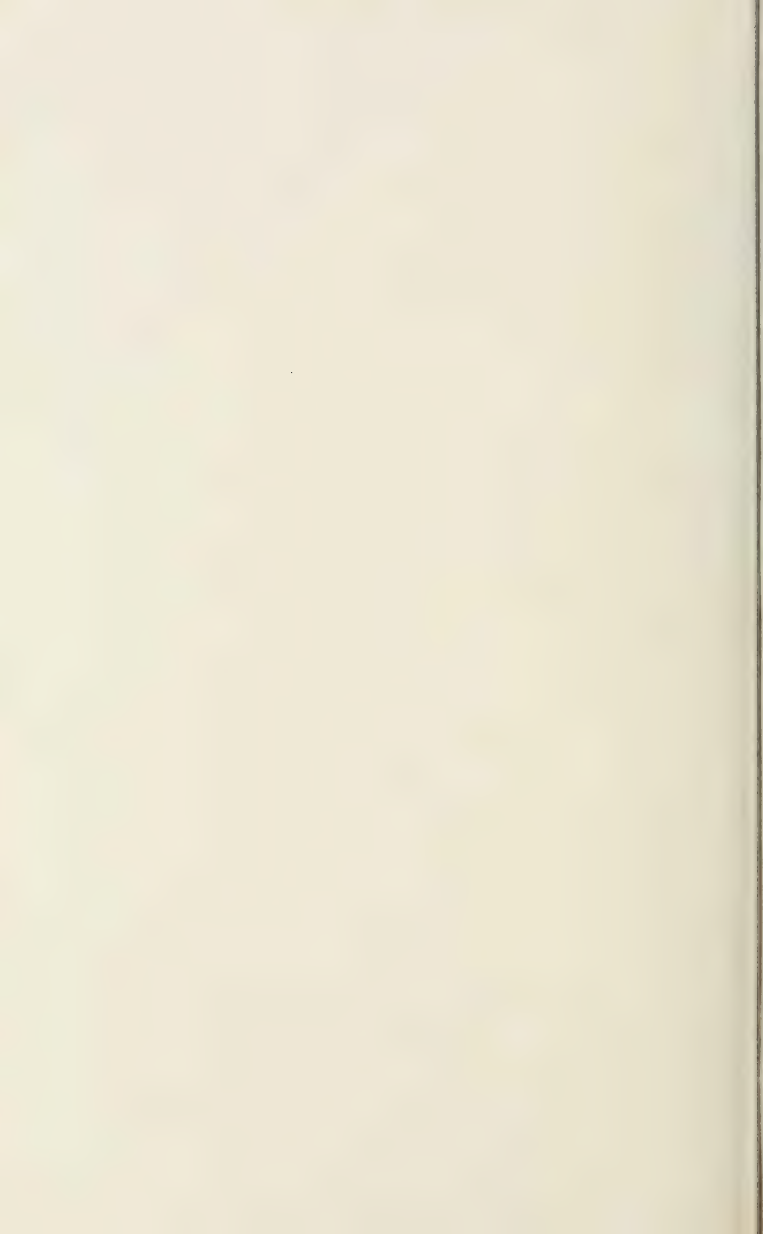
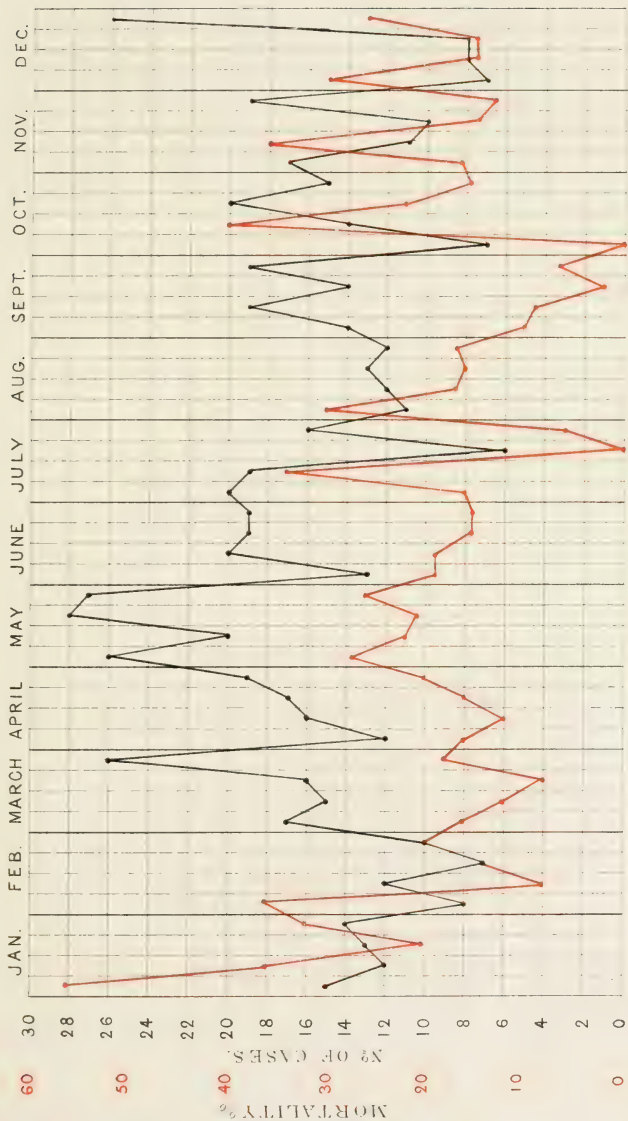


CHART II.



EXPERIMENTAL OBSERVATIONS
ON THE
BRAIN OF THE MONKEY.¹

By W. B. HADDEN, M.D., F.R.C.P.,

AND

C. A. BALLANCE, M.S., F.R.C.S.

In these experiments two varieties of monkeys were used, viz. *Macacus rhesus* and *Macacus sinicus*. In every case the animal was placed under the influence of ether and killed immediately after the experiment.

The apparatus used for stimulating the cortex was one Daniell cell and a Du Bois-Raymond coil. The secondary coil was almost invariably drawn out 10 cm. from the primary, this being just sufficient to cause a slight pricking sensation of the human tongue. The electrodes were of fine platinum wire, and were placed 2 millimetres apart.

In the record of our experiments considerable variations will be found in the results obtained by stimulating the same cortical area in different animals. This may be partly explained by the differences in the cerebrum of the *Macacus*

¹ Towards the expenses of this research a grant was made by the Scientific Grants' Committee of the British Medical Association. The experiments were performed at the Brown Institution.

rhesus and *Macacus sinicus*. We have, therefore, recorded our observations on the two varieties in separate columns. Taking either kind separately, however, we have not been able to localise with the precision claimed by some observers. We have not always, for instance, succeeded in evoking the same movement on stimulating a certain spot in different animals. In some instances the movement obtained was such as would be expected from a centre in the immediate vicinity, and no doubt, in some cases, this was due to diffusion of the current. Not uncommonly movements resulted which could not be explained on this assumption. It is possible, in our opinion, that the centres on the cortex, even in the same species of animal, are liable to certain variations of position.

We do not presume to draw definite conclusions from the limited number of experiments which we have performed. We simply record below some points of interest and leave the rest of our observations without comment. Unless otherwise stated the subsequent remarks are based on our observations on the bonnet monkey, or *Macacus sinicus*, this animal having a more highly organised cerebrum than the *rhesus*.

Lower jaw.—Marked depression of the lower jaw with opening of the mouth, the tongue being occasionally moved forwards, occurred on stimulation of points 11, 12, 14, 18 (fig. 2). From observations on the *rhesus* it is likely that areas 13 and 15 (fig. 2) also form part of this centre.

Face.—Retraction of the angle of the mouth was often evoked on stimulating 11, 1, 2, 3 asc. front. (fig. 2), and A and 16 ang. gyr. (fig. 4). Stimulation of 1 and 2 asc. par. (fig. 1) gave rise to closure of eye (upper face area).

Upper limb.—Movements of the upper limb occurred on stimulating 1 to 8 asc. front. (fig. 2). At 7 and 8 the lower limb was often simultaneously affected, and from 3 to 1 face movements were apt to be associated with the upper limb movements. On the asc. par. the centre for the upper limb extended from 1 to 4 (fig. 1), blending at 4 with that of the lower limb, and at 1 with that of the face. Movements of the upper limb were also obtained on stimulating 4 and 5 marginal convol. (fig. 5). We were not able to fix

precisely the centres for the movements of the various segments of the upper limb, since these appear to overlap. Speaking broadly, stimulation of the upper limb area from below upwards gave rise preferentially to movements of the thumb, thumb and index, digits, wrist, forearm, elbow, and shoulder. At 1 and 2 asc. front. (fig. 2), 2, 3, and 4 asc. par. (fig. 1) movements of the thumb only were often obtained. In the *rhesus* movements of the index were associated with that of the thumb on stimulating 3 and 4 asc. front. (fig. 2), and movements of the face were combined with movements of thumb on exciting 11 and 12 asc. front. (fig. 2).

Lower limb.—Movements of the lower limb were obtained at 7, 8, 9, 10 asc. front. (fig. 2), combined at 7 and 8 with movements of the upper limb. On the asc. par. (fig. 1), stimulation of 4, 5, 5 *a*, 6, 6 *a*, 7, 8, 9, 10 gave movements of the lower limb, combined at 4, 5 *a*, and 7 with those of the upper. On the marg. conv. (fig. 5) the lower limb area comprised 1, 2, 3, 3 *a*, 4, 4 *a*; at 4 movements of the tail were associated in two animals, and in one of these the trunk was also moved.

From observations on the *rhesus* the centre for the lower limb also comprises at least 1, 1 *a*, 2, 3, 3 *a*, 4, 5, 6, 6 *a* superior front. (fig. 3).

Isolated movement of the hallux was sometimes obtained on stimulating 10 asc. front. (fig. 2), and 1, 2, 3 marg. conv. (fig. 5).

Bilateral movements of the lower limbs were sometimes evoked on stimulating 3, 3 *a*, 4, 4 *a* marg. conv. (fig. 5), 9 and 10 asc. front. (fig. 2), 4, 8, and 9 asc. par. (fig. 1). All these areas, except 4 asc. par., lie near the margin of the hemisphere.

Head.—Movements of the head towards the opposite side were obtained on stimulating 5, 5 *a*, 6, and 7 marg. conv. (fig. 5), occasionally at 5, 5 *a*, 6 asc. par. (fig. 1), H and I ang. gyr. (fig. 4). In the *rhesus* movements of the head, often with associated movements of the eyes to the opposite side, were obtained on stimulating 8, 9, 11, 13 sup. and mid. front. conv. (fig. 3).

*Ascending Frontal (FIG. 2).¹*RHEBUS (*Macacus rhesus*).

1. Face, movements of. Thumb, extension of.
Head, movement to left. Thumb, slight abduction of.
Thumb, adduction and flexion of; on prolonged stimulation, flexion of digits.
Thumb, flexion of.
Left hemisphere, retraction of angle of mouth. Same spot on right hemisphere; thumb, abduction of, with movement of index towards thumb.
2. Fingers, extension of, at phalangeal joints. Thumb, adduction of, and head turned to opposite side.
Forearm, supination of. Thumb and fingers, extension of.
Thumb, abduction.
Wrist, extension. Elbow, flexion.
Fingers, extension of metacarpo-phalangeal joints.
Thumb, adduction of, with some flexion.
Left hemisphere, retraction angle of mouth. Same spot on right hemisphere; abduction of thumb and index finger.
3. Digits, including thumb, extension of, at phalangeal joints.
Wrist, extension of.
Elbow, flexion of, also extension of metacarpo-phalangeal joints. At a slightly higher level, extension of all joints of fingers (no movement of thumb).
Thumb, adduction; no flexion.
Thumb, flexion and adduction.
Abduction of index.
Left hemisphere, retraction of angle of mouth. Same spot on right hemisphere; thumb abduction and abduction of index.

BONNET (*Macacus sinicus*).

1. Thumb, adduction of.
Face, retraction angle of mouth; also thumb, flexion of. On prolonged stimulation, retraction, angle of mouth and flexion of elbow; no movement of thumb.
Thumb, slight extension and adduction.
2. Thumb, adduction of.
Digits, flexion at phalangeal joints, followed almost at once by adduction of thumb.
Thumb, slight extension and adduction of, with slight retraction, angle of mouth.
3. Nil.
Face, retraction of angle of mouth.
Supination of forearm.
Arm, abduction of, and slight rotation outwards.

¹ Each new paragraph under the different numbers represents a stimulation in a separate animal.

RHESUS.

4. Wrist, adduction of.
Digits flexed. Thumb adducted (closure of hand).
Forearm, pronation, with adduction of arm. Thumb flexion and adduction of. Abduction of index and extension at metacarpophalangeal joints of all digits.
Thumb and index, abduction of.
Slight separation of all digits.
5. Wrist and thumb, adduction of.
Digits, extension at metacarpophalangeal joints.
6. Fingers and thumb, flexion of, at last phalangeal joints.
Wrist, adduction of.
Thumb, extension of, with slight abduction, followed by extension of wrist.
Digits, extension of, at metacarpophalangeal joints.
7. Hip, flexion of.
Wrist, extension of, with slight extension of elbow.
8. Thigh, rotation outwards, followed by extension of ankle.
Ankle, extension of, followed by knee flexion.
Hallux, abduction and extension; extension of second toe at metatarso-phalangeal joint, with separation from hallux, followed by extension of all toes with separation from each other, and by extension of ankle.
9. Toes, extension at metatarso-phalangeal joints.
Hallux, abduction and extension; extension of second toe, at metatarso-phalangeal joint, with

BONNET.

4. Wrist, extension of. On prolonged stimulation, extension of elbow.
Elbow, extension of.
Forearm, pronation of, and adduction of wrist.
Digits and elbow, flexion of. Abduction of arm also.
5. Digits and elbow, flexion of. Arm abduction of.
6. Elbow, extension of.
Elbow and shoulder, extension of.
Digits and elbow, flexion of. Arm, abduction of.
7. Elbow, extension of.
Ankle, extension of, and knee, flexion. Later, slight extension of elbow, rotation outwards of thigh, eversion of foot, and flexion of hallux.
Arm, abduction and internal rotation.
8. Elbow, extension of, with general flexion of lower limb.
Wrist, adduction of.
Ankle, extension of, and flexion of thigh, followed by flexion of digits and adduction of hallux.
9. Toes, extension, mainly of great toe, with slight flexion of knee.
Knee and hip, flexion of. Ankle, extension.
Ankle and digits, extension of

RHEBUS.

separation from hallux, followed by extension of all toes, with separation from each other and extension of ankle.

10. Toes, extension at metatarso-phalangeal joints.
Ankle, extension of, followed by knee flexion.
Hallux, abduction and extension; extension of second toe at metatarso-phalangeal joint, with separation from hallux, followed by extension of all toes, with separation from each other, extension of ankle and rotation out of thigh.
11. Thumb, slight extension at both joints. Face, movement of.
Face, angle of mouth, elevation.
Face, depression of lower lip ? platysma movement.
Face, retraction of angle of mouth.
12. Thumb, extension of, and elevation and retraction, angle of mouth.
Wrist, extension of, and elbow flexion.
Face, drawing-in of cheeks.
13. Jaw, depression and protrusion of tongue.
Nil.
Face, drawing-in of cheeks and depression of lower jaw.
14. Jaw, depression of lower jaw and protrusion of tongue.
Ditto.
Face, drawing-in of cheeks and depression of lower jaw.
15. Jaw, depression of lower, and protrusion of tongue.
Ditto.
Nil.

BONNET.

except hallux. On prolonged stimulation, eversion of foot on side of stimulation.

Ankle, extension of. Thigh, flexion, followed by flexion of digits and adduction of hallux.

10. Toes, flexion of, most marked with great toe. Knee, flexion.
Hallux, adduction of.
Ankle and toes, extension of. On prolonged stimulation, eversion of foot on side of stimulation, and movements of tail.
Ankle, extension of, and thigh, flexion of, followed by flexion of digits and adduction of hallux.
11. Face, retraction angle of mouth.
Slight opening of mouth.
Nil.
12. Jaw, depression of lower jaw, marked opening of mouth.
? Nil.
? Nil.
13. ? Nil.
14. ? Nil.
? Nil.
Jaw, depression of lower, and protrusion of tongue.
15. No bonnet.

RHESUS.	BONNET.
16. Nil. Nil.	16.
17. Nil. Drawing-in of cheeks.	17.
18. Nil. Drawing-in of cheeks.	18. Opening of mouth. Opening of mouth, and tongue moved forwards, but not pro- truded beyond jaws.
19. Nil. Nil.	

Superior, Middle and Inferior Frontal Convolution (Fig. 3).

1. Rotation outwards of thigh.	1. Extension of ankle and toes with strong flexion of knee.
1a. Extension of ankle. Abduction and extension of hal- lux, with extension of all toes at metatarso-phalangeal joints and separation; also extension of ankle and rotation outwards of thigh.	1a. Not stimulated.
2. Rotation outwards of thigh, some- times followed by extension of ankle. Extension of ankle and flexion of knee and hip (limb drawn up). Also extension of wrist and digits and extension of elbow.	2. Not stimulated.
3. Flexion of ankle.	3. Nil.
3a. Flexion of knee.	3a. Not stimulated.
4. Slight flexion of ankle. Extension of ankle, flexion of knee and hip (limb drawn up).	4. Not stimulated.
5. Nil. Flexion of knee. Extension of ankle, flexion of knee and hip (limb drawn up).	5. Not stimulated.
6. Abduction of thigh.	6. Nil.

RHESUS.

7. Extension of ankle and wrist.
Extension of wrist and digits and
slight extension of elbow.
8. Head to left.
Adduction of arm, supination of
forearm, slight extension of
fingers.
Head to right, and sometimes eyes
also.
9. Head to left.
Head to right, and sometimes eyes
also.
10. Flexion of elbow and wrist (ex-
tremity moved to mouth).
Extension of ankle, flexion of knee
and hip (limb drawn up).
11. Head and eyes to opposite side.
Ditto.
12. Flexion of knee.
Extension of ankle, flexion of knee
and hip (limb drawn up).
13. Nil.
Head and eyes to opposite side.
14. Rotation outwards of shoulder and
pronation of forearm.

BONNET.

7. Not stimulated.
8. Not stimulated.
9. Not stimulated.
10. Not stimulated.
11. Not stimulated.
12. Not stimulated.
13. Not stimulated.
14. Not stimulated.

Stimulation of the areas marked M, N, O, P, Q, R, S, T, V (fig. 3), gave no movements.

Ascending Parietal (FIG. 1).

- | | |
|-------------------------------|---|
| 1. Digits, flexion. | 1. Eye, closure of. |
| Thumb, flexion. | Face, retraction of angle of mouth. |
| Nil. | Closure of eyelid. |
| Thumb, adduction. | Nil. |
| Thumb, adduction and flexion. | Wrist, adduction on prolonged
stimulation. |
| | Face, closure of eye and retraction
of angle of mouth. |

RHESUS.

2. Thumb, abduction.
Thumb, flexion.
Nil.
Digits, extension of last two phalangeal joints.
Thumb, adduction and flexion.
Nil.
3. Digits, flexion. Elbow, flexion (slight).
Nil.
Nil.
Thumb and digits, flexion of all joints.
4. Digits and thumb, slight flexion.
Nil.
Nil.
Forearm, supination.
Digits, extension, followed by extension of wrist (slightly higher level, ditto, with extension of elbow.
5. Head to left.
Nil.
Nil.

BONNET.

2. Thumb, adduction. Digits, flexion.
Head to same side and closure of opposite eye.
Thumb, flexion.
Nil.
Digits, flexion at phalangeal joints, followed at once by adduction of thumb.
Thumb, flexion. On prolonged stimulation, flexion of index also.
3. Wrist, extension. Thumb, adduction.
Thumb and digits, flexion at all joints.
Thumb, abduction.
Digits (on prolonged stimulation), flexion at phalangeal joints, followed at once by adduction of thumb and pronation of forearm.
Wrist, adduction. Later, hand clenched and brought to mouth.
4. Shoulder, elevation. Extension at phalangeal joints of little and fourth toes and flexion of great toe on side of stimulation.
Thumb, adduction. On prolonged stimulation also extension of wrist.
Thumb, flexion.
Nil.
Elbow, flexion.
Arm, abduction. Elbow, flexion.
Forearm, pronation. Movements of hand towards back, as though in the act of scratching.
5. Toes, extension at metatarsophalangeal joints. Great toe, adduction, with flexion at phalangeal joints.
Head to right.
Nil.
Nil.
Head to right.

RHEBUS.

- 5a. Nil.
 Nil.
 Hallux, flexion at phalangeal joints, also separation and extension of other toes.
6. Ankle and hallux, extension. Other toes slightly extended.
 Nil.
 Arm on same side abducted.
- 6a. Ankle, digits, and knee, extension, Ditto.
 Nil.
 Hallux and second toe, extension.
7. Nil.
 Hallux, adduction, slight extension of last phalangeal joints of other toes, with separation of toes.
 Hallux, flexion at phalangeal joints. Separation and extension of other toes, also extension of ankle.
8. Ankle, extension.
 Hallux and second toe, extension.

BONNET.

- 5a. Shoulder, elevation. Arm, abducted. Hallux on side of stimulation adducted.
 Ankle, extension.
 Head, rotation to opposite side.
 Nil.
 Hip, flexion. Knee, extension on prolonged stimulation.
6. Ankle extension and toes (all), extension at metatarso-phalangeal joints.
 Head to right.
 Nil.
 Nil.
 Nil; but later, head to right, retraction of angle of mouth, and slight adduction of arm.
- 6a. Ankle extension, and all toes extension at metatarso-phalangeal joints.
 Hip and knee, flexion.
 Nil.
 Nil.
7. Shoulder, elevation. Arm, abduction. Hallux, adduction on side of stimulation.
 Hallux, adduction. On prolonged stimulation, flexion of toes.
 Hallux, adduction. Toes, flexion and adduction. Ankle, extension.
 Nil.
 Nil.
 Toes (except hallux), extension.
 Ankle, extension. On prolonged stimulation, flexion of hip.
8. Ankle, extension. Extension of all toes at metatarso-phalangeal joints. Also flexion and adduction of hallux on side of stimulation.
 Hip and knee, flexion.
 Hallux, adduction. Flexion and adduction of toes. Extension of ankle. No movement of great toe on side of stimulation.
 Nil.
 Nil.
 Nil.

RHESUS.

- 9. Nil.
Nil.
- 10. Ankle, extension.
Nil.
Nil.

BONNET.

- 9. Knee, flexion. Ankle, extension.
Flexion of hallux on side of stimulation.
- 10. Ankle, extension, followed by slight flexion of knee.

Marginal Convolution (FIG. 5).

- 1. Nil.
- 2. Nil.
- 3. Knee, flexion, and external rotation of knee and hip.
- 3a. Nil.
- 4. Flexion of knee and hip.

- 1. Nil (in three different animals).
Adduction of great toe only.
- 2. Nil (in three different animals).
Adduction of great toe only.
- 3. Nil.
Flexion of hip and ankle, with movement of tail.
Extension of ankle. Rotation outwards of thigh. Rotation inwards of thigh on side of stimulation. Movements of tail.
Adduction of great toe.
- 3a. Rotation outwards of thigh.
Rotation of trunk to opposite side. Flexion of toes, chiefly hallux, on side of stimulation, and rotation inwards of thigh on side of stimulation.
- Nil.
- 4. Abduction of arm and extension of elbow.
Movement of trunk to opposite side, followed by flexion of hip and movements of tail. On stimulating this area again, after an interval, flexion of knee, rotation outwards of thigh, and flexion of ankle.
Extension of knees and ankles on both sides, the movement on the side of stimulation being well marked. Also movements of tail.
- Nil.

RHESUS.

- 4a. Nil.
5. Nil.
- 5a. Not stimulated.
6. Nil.
7. Not stimulated.

BONNET.

- 4a. Extension of knees and ankles of both sides, the movement on side of stimulation being well marked. Also movements of tail.
5. Flexion of elbow.
Head turned to opposite side.
Nil.
- 5a. Head turned to opposite side.
Nil.
6. Head turned to opposite side.
Nil.
7. Head turned to opposite side.
Nil.

Angular Gyrus (FIG. 4).

- | | |
|---|--|
| A. Thumb, slight adduction of.
Nil.
Nil.
Nil. | A. Nil.
Angle of mouth, retraction of. |
| B. Head, to opposite side.
Nil.
Nil.
Nil. | B. Nil.
Nil. |
| C. Head, to opposite side.
Nil.
Nil. | C. Nil.
Nil. |
| D. Slight flexion of fingers and thumb.
Nil.
Nil. | D. Nil.
Nil. |
| E. Elevation of eyelids.
Nil.
Nil. | E. Nil with 8 cm., but with 6 cm. abduction of arm, slight elevation of shoulder, and partial closure of upper eyelid. |
| F. Eyelids, elevation of, well marked; and movement of eyeballs to opposite side.
Nil. | F. Nil. |
| G. Nil. | G. Nil. |
| H. Nil. | H. (With 6 cm.) Head to opposite side and elevation of ear on side stimulated. |
| K. Nil. | K. Nil. |

RHESUS.	BONNET.
I. Nil.	I. ? Head, to left.
14.	14. Nil.
15.	15. Nil.
16.	16. Angle of mouth, retraction of.

From a limited number of observations on the internal capsule the following movements appear to be represented in order from before backwards:

Elevation of upper eyelids, with movement of head to opposite side.

Movement of head to opposite side.

Movement of head to opposite side, retraction of angle of mouth, slight abduction of arm.

Ditto, but face movements more marked.

Flexion of elbow and elevation of shoulder.

Slight extension of toes, except hallux.

Flexion of knee and extension of ankle on both sides, the movement on side of stimulation being less marked than on the other side.

Eyes turned towards side of stimulation.

DESCRIPTION OF PLATES V AND VI,

Illustrating Dr. W. B. Hadden and Mr. C. A. Ballance's
Paper on "Experimental Observations on the Brain of
the Monkey."

PLATE V.

FIGS. 1, 2, 3.—Right hemisphere of the Brain of the Monkey (*Macacus sinicus*). For reference to numbers and letters see text.

PLATE VI.

FIGS. 4 AND 6.—Right hemisphere of the Brain of the Monkey (*Macacus sinicus*).

FIG. 5.—Internal aspect of right hemisphere. For reference to numbers and letters see text.



FIG. 1



FIG. 2

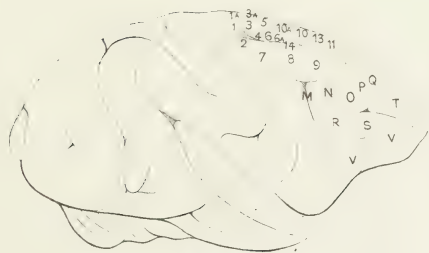
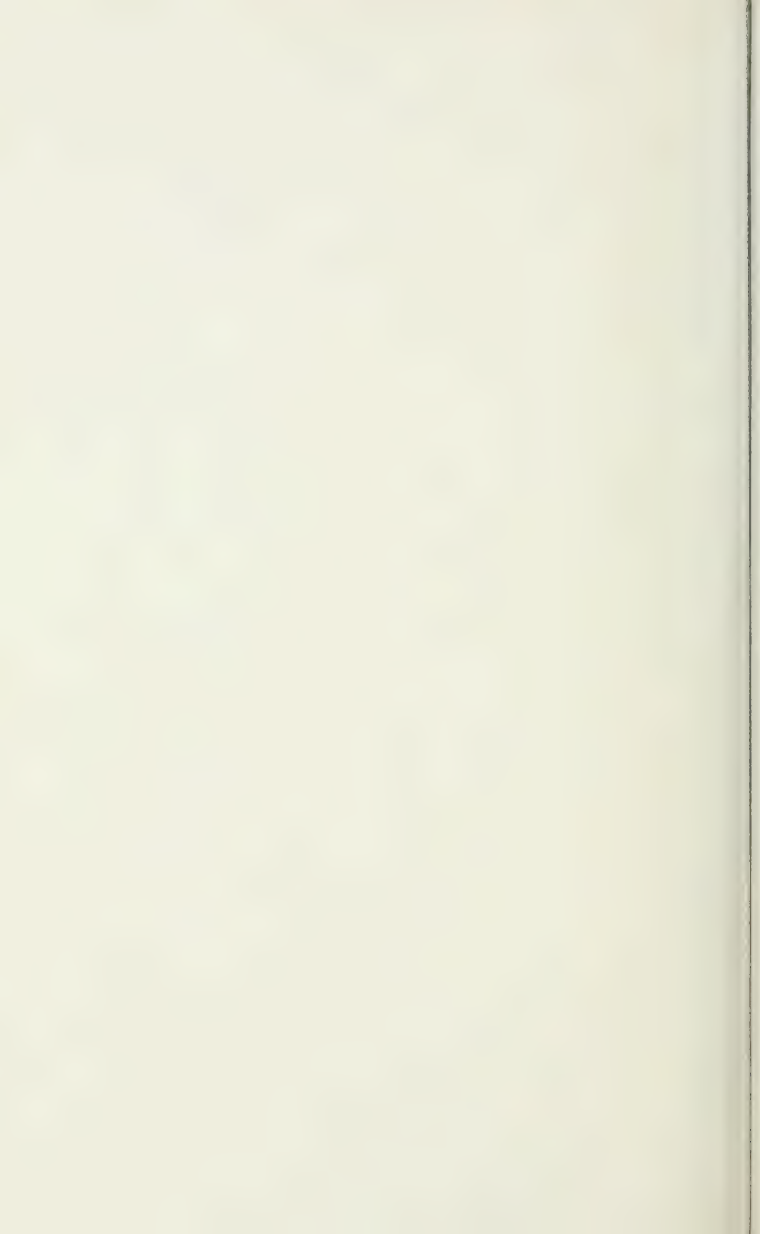


FIG. 3



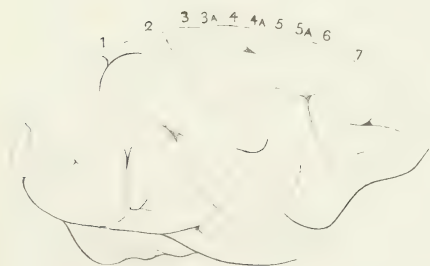
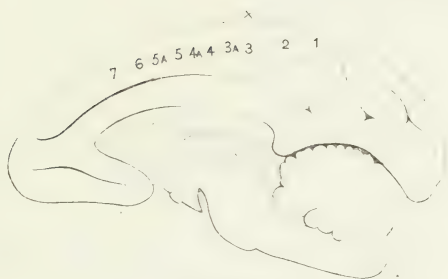
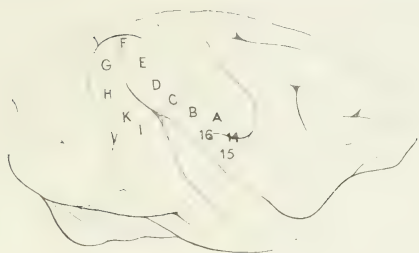


FIG. 6

UMBILICAL POLYPI.

By W. HEPTINSTALL MILLAR, M.R.C.S., L.R.C.P.

UMBILICAL polypi, while of not very frequent occurrence, nor of any great clinical importance when found, yet possess a certain interest, both from an etiological standpoint and in consequence of the slight but not unimportant diversity in structure which has been noted in recorded cases ; and as the nature of the growth detailed below differs considerably from that of most of those already published, it may be of interest for purposes of comparison to refer to the literature now extant.

Most modern writers on the surgical diseases of children refer more or less briefly to the subject, and while the clinical history, and macroscopical appearances, as well as the method of dealing with these growths are mostly in accord, the pathology is, as a rule, meagre, and the opinions expressed as to their nature conflicting.

Thus Erichsen, in his 'Science and Art of Surgery,' speaks of a "warty growth" as occasionally met with in children springing from the hollow of the umbilicus, which is best removed by ligature, Bryant dismisses them as formed of "exuberant granulations," Mr. Cooper Foster as consisting of fat cells without any vessels, while Holmes, after mentioning their presence as a source of watery discharge, describes

the polypus as "a small vascular protrusion," which may grow to some size, adding that "this protrusion is congenital, and is somehow connected with ligature of the umbilical cord."

That there is more than one variety of polypus occurring in this situation in children, which, though essentially different, are precisely similar in outward appearance, we think that the following case together with a short review of the subject will show.

J. C. M., a female child, aged eight weeks, suffering from congenital syphilis, attended as out-patient at the Evelina Hospital for Sick Children in March, 1891, and by the kindness of Dr. Carpenter, under whose care the patient was, I am enabled to publish the case. In answer to enquiries the mother stated that patient had always been quite healthy and that nothing wrong was noticed about her at birth. The remains of the funis separated quite naturally about the end of the first week, and nothing abnormal was observed till fourteen days before child was seen by me, when mother noticed a thin watery discharge from the umbilicus and the presence of "a small red growth" in that situation. She did not think it had grown much if at all since she had first noticed it.

On examination, patient, who was a well nourished, fat child, was found to have a small pedunculated growth about the size of a pea, and of a deep red colour, attached to the umbilical cicatrix. Its surface was moist and shiny, and presented toward to its centre a slight dimple which would not admit the point of a probe. It bled readily when touched, was rather difficult to expose on account of the amount of fat in the abdominal walls, and was so easily lacerable that it came away between the blades of the forceps during the application of a ligature. A small quantity of dark venous blood escaped, but quickly ceased to flow, and the stump was then dressed with iodoform. There was no collection of irritating matter about the base of the growth, and the skin around appeared quite healthy. The child seemed to suffer no inconvenience either before or after removal.

On microscopical examination the growth is seen to be

composed of a richly cellular granulation tissue, abundantly supplied with dilated and tortuous vessels which are somewhat rudimentary in structure. Running up from the pedicle and supporting the vessels is a certain amount of young connective tissue. In some sections, the surface consists of more or less flattened granulation-cells, so as to form a quasi-epithelium; in other parts, granulation-cells and immature blood-vessels are seen running level with the surface, while others again show developing fibrous tissue in addition, the whole growth bearing a marked resemblance in structure to that of granulation anal polypi. The cells are nowhere columnar. There is a complete absence of glands, and no fat cells are present.

Of other published cases the 'Transactions of the Pathological Society' furnish two, one reported by Mr. A. Pierce Gould in 1880, and the other by Mr. W. S. Coleman in 1888, while two cases reported in the 'Illustrated Medical News' of March 23rd, 1889, and August 17th, 1889, by Mr. G. H. Makins and Dr. George Carpenter, and by Dr. C. B. Ball, respectively, together with a Report by Dr. F. W. Kidd on "Capillary Angioma of Umbilicus" in the same journal, and a series of thirteen cases collected by Dr. Van Henkelom published in 'Virchow's Archiv,' bd. cxi, heft. 3, March 2nd, 1888, complete the literature of the subject.

A paper by Mr. A. G. R. Foulerton in the 'Illustrated Medical News,' September 14th, 1889, recording an umbilical growth in an adult, due to the irritation of an encapsulated mass of hard sebaceous matter, though of interest as indicating a possible cause for similar phenomena in childhood, has at present no very direct bearing on the subject in hand.

The descriptions of the growths in the articles enumerated above fall readily under two heads, viz. congenital umbilical polypi and capillary angiomata, the former being capable of subdivision according as the glands are unbranched, like Lieberkühn's intestinal follicles, or branched and resembling the pyloric variety found in the stomach.

Under such a classification, the recorded cases would arrange themselves as follows :

Congenital Umbilical Polypi.

Unbranched ("Lieberkühn's")—Mr. Makins' and Dr. Carpenter's case.

Mr. Coleman's case.

Branched ("pyloric")—Dr. Ball's case.

Mr. Pierce Gould's case.

Of Dr. van Henkelom's cases, according to Dr. Ball, the "majority" appear identical with the "pyloric" group, while "several" resemble "Lieberkühn's grouping."

Capillary Angiomata.

Mr. F. W. Kidd's case.

These two classes of growth, though differing markedly in structure, and probably in origin, are clinically indistinguishable. The main characteristics of each are as follows:

Congenital umbilical polypi are present at birth, and structurally are composed of elements similar in kind and arrangement to those of the small intestine, are covered by a single layer of columnar cells, and have numerous tubular glands, either branched or unbranched, opening upon the free surface. A central sinus may or may not exist, and the same remark may be made as regards the presence of Wharton's jelly.

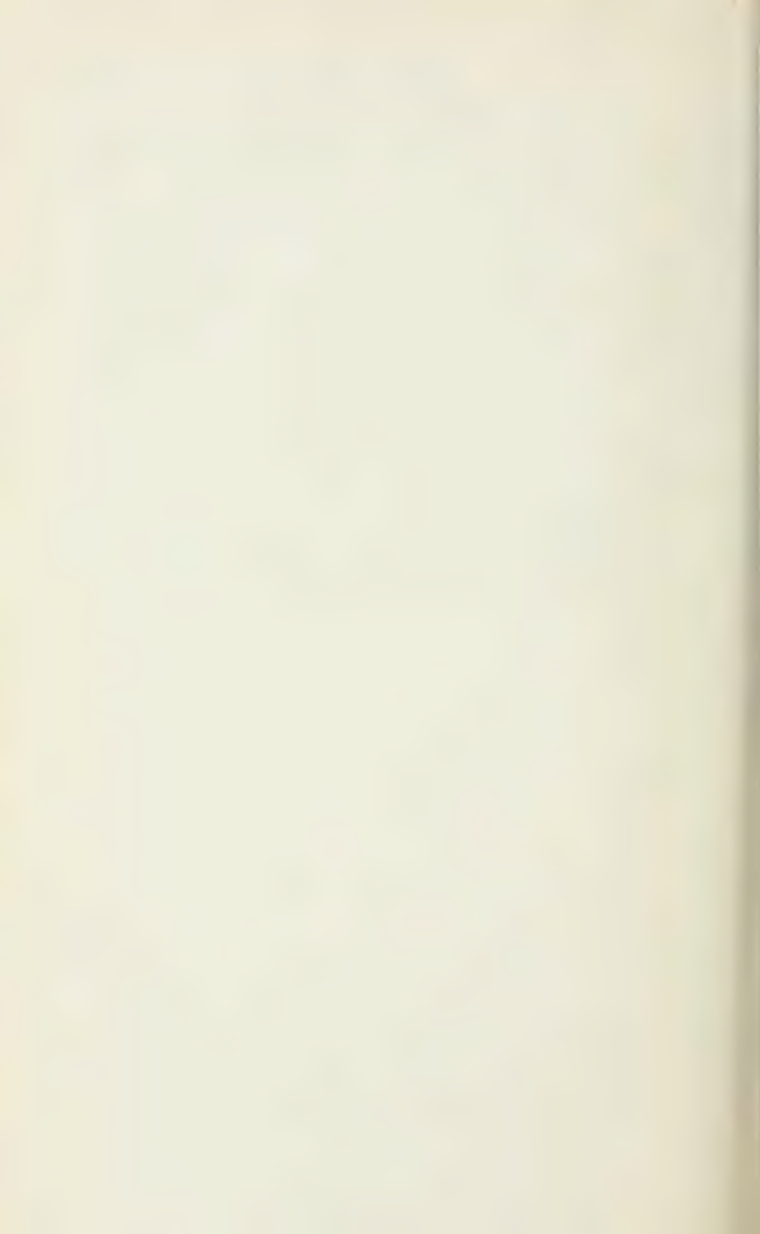
The capillary angiomata are not always congenital. Structurally, besides their markedly vascular nature, they have no covering of columnar epithelial cells, and no glandular tissue whatsoever.

From the foregoing it will be seen that the case we have described differs from both the above, and appears to be the first case of *granulation umbilical polypus* on record, its general characteristics, with the complete absence of any traces of gland structure or of columnar surface epithelium clearly separating it from the true congenital variety.

As regards the origin of polypi in this situation, the close structural analogy between the congenital umbilical polypus and the soft mucous polypi of the rectum, also met with in children, suggests a similar developmental origin, and it is, indeed, generally conceded that these bodies are probably

portions of the omphalo-mesenteric duct, which, persisting after foetal life is closed, are truly congenital in nature, although their existence may not be recognised till some time after birth.

With regard to the capillary angiomata, it is evident, bearing in mind the congenital nature of nævoid growths elsewhere, that the term "congenital," as applied to umbilical growths, cannot be exclusively confined to polypi presenting glandular elements, although up to now there appears to have been no recorded case of a vascular umbilical polypus (a capillary angioma) actually present at birth. The fact of their occasional development in such a position does not seem strange when the active part played by the umbilical opening in conveying the blood-supply to the foetus is remembered, and the rudimentary nature of the tissues around is considered. The origin of the granulation umbilical polypus is obvious. In any case our final appeal in attempting the diagnosis of one form of umbilical polypus from another must clearly be made to the microscope.



THREE CASES OF SEPTIC POISONING OF OBSCURE ORIGIN.¹

BY FREDERICK POLLARD, M.D.

1. THE following case of acute and rapidly-fatal septicaemia, in many respects closely resembling malignant pustule, but without any obvious source of infection, was under my care some time ago, while I was engaged in country practice.

Mrs. X—, æt. 49, sent for me one February evening, as she was suffering from stiff neck, sore throat, and an irritable cough. She said that the evening before she noticed that a pimple had formed on the side of her neck, which was stiff and uncomfortable, but that she did not feel ill in herself. On examining the neck, I found a clear oval vesicle, situated about two inches below, and the same distance behind, the left angle of the lower jaw, surrounded by a bright areola of about an inch in diameter. There was some general swelling of that side of the neck, which was firm and elastic, not pitting on pressure. The site of the vesicle was not raised or indurated, and there was no erythema beyond the limits of the areola. The patient had a dry cough, and some discomfort in swallowing. Fauces somewhat red, but otherwise normal. Temp. 100°. Chest

¹ Read before the Metropolitan Counties Branch of the British Medical Association, November 19th, 1890.

sounds natural. Urine without albumen. She had a restless night, and the next morning I found things looking very ominous. The swelling of the neck had greatly increased, and had spread to the face, chest, shoulder, and back. The temperature was not higher, but the pulse was quick and feeble. The voice was weak and husky, and swallowing was difficult, but as yet the breathing was not laboured. I made a free incision in the neck through the centre of the original vesicle, and had fomentations applied constantly. The cut surfaces looked engorged, but there was no appearance of pus in the wound, nor did the skin or cellular tissue look black or sloughy.

During the day the patient's condition grew steadily worse. The swelling increased, spreading across the front of the neck, and the whole head and face became greatly puffed. The swollen parts were firm and brawny; the skin pale; no superficial œdema. Towards evening the breathing began to be laboured, and the invalid to be drowsy and wandering. Gradually respiration was more and more impeded, until the patient became semi-comatose, and the breathing loud and stertorous. As hardly any air was now entering the chest, I decided to perform tracheotomy. The operation was not easy, as the trachea was at a considerable depth in consequence of the swelling of the neck, and I was single handed, my only helper being the village nurse who held the candle. However, I quickly got the tube into position, and the breathing became quiet, air now freely entering the chest. Nevertheless, the patient did not recover consciousness, and died about two hours afterwards. No post-mortem examination was allowed.

This case was evidently one of virulent animal poisoning, but I was unable to find any probable source of infection. The weather was cold, and it was too early for flies. The patient lived in a remote part of Devonshire, and had nothing to do with foreign wool or hides. Dr. Ogle, the Statistical Superintendent of the General Register Office, who wrote to me about the case, thought it must be of the nature of anthrax or woolsorters' disease, and suggested that possibly a pad of false hair had been the means of inoculating the patient with the poison of anthrax. The suggestion,

however, came nine months after the patient's death, and I was then unable to get any definite information bearing on the point. Moreover, if pads of false hair are liable to convey such deadly infection one would expect to meet with, or at least to hear of, such cases more frequently. My case differed from those of woolsorters' disease as observed in Bradford, inasmuch as in these latter there is, as a rule, no external pustule, or vesicle, or swelling. The poison is inhaled, and the symptoms are fever, great debility, congestion and hepatisation of the lungs, and death in from one to four days (*vide* papers by Dr. J. H. Bell, 'Lancet,' 1880). My case bore more resemblance to those of malignant pustule, such as are met with in Guy's Hospital, occurring among the workers in the Bermondsey hide warehouses, several of which were described by Mr. Davies-Colley some years ago (*vide* 'Brit. Med. Journ.,' 1878, and 'Med.-Chir. Trans.,' 1882). In these instances, however, there was, in addition to a vesicle or group of vesicles surrounded by an areola, a central black eschar or slough, raised and indurated, which was absent in my case. This diseased mass was in several cases excised by Mr. Davies-Colley with good results. In another of his cases, the pustule appeared in a very similar situation to that of my patient's vesicle, viz. below and behind the angle of the jaw; and the results were very similar, viz. great swelling extending to the larynx, for which tracheotomy was performed, the patient dying shortly afterwards. The strange thing in my case is the difficulty of assigning a probable source of such malignant infection.

2. In the second case which I will briefly relate, I myself was unfortunate enough to be the patient. I had just returned from a month's holiday spent in France and Germany, and thought myself in rude health. But I had not been many days in Liverpool, where I then practised, before I noticed a painful swelling on the outer side of the left leg. The limb rapidly swelled, and became extremely inflamed. The temperature ran up, and I was soon very ill. In a day or two, a black spot appeared in the centre of the inflamed area. I sent to ask my friend and neighbour, Mr.

Mitchell Banks, to see the leg, and endeavoured to brace myself to bear the free crucial incision through the exquisitely tender tissues which I expected he would recommend. He was merciful, however, and simply ordered "large sloppy poultices" to be applied frequently. After a while, pus began to exude around the margin of the black spot, and the inflammation and pyrexia to subside. Eventually, a circle of the whole thickness of the skin, as large as a shilling, sloughed out. The hole in the leg gradually filled up, and was ultimately covered by a thin cicatrix. I need hardly say that this sharp illness entirely robbed me of all the strength I had accumulated during a month's holiday.

There can, I think, be no doubt that I suffered from animal poisoning, but what its source was I was never able to discover. Possibly, while abroad, I was bitten by some poison-carrying insect; but, if so, I was not conscious of it at the time, and the poison must have lain dormant for several days at least. I have no doubt, however, that the poison was similar to that of anthrax, and that if it had been inserted into the neck instead of into the leg, my fate would probably have been similar to that of the unfortunate woman whose case I described just now.

3. The third case which I shall mention occurred, like the first, while I was in practice in Devonshire. The patient was a farmer, aged thirty-one, slightly built and by no means robust, who had with difficulty struggled through a very severe attack of enteric fever three years before. About the middle of June it happened that a bullock belonging to my client broke its leg in a marsh. A few days after, on June 25th, the animal was killed, and its owner helped to lift it into a cart, taking hold of the broken limb, which by this time was in a highly offensive condition. He was greatly affected by the smell of the bullock's leg, and felt sick and faint; and shortly afterwards he began to be troubled with hiccup. The weather was very hot, and it was a busy time, sheep-shearing being in full swing; but he could scarcely do any work, as he was feeling so weak and the hiccup was so troublesome. He was frequently obliged

to come into the house to lie down. I did not see him until July 4th, nine days after the incident of the bullock. He came to my house, but was evidently unfit to be going about, so I ordered him home to bed. His symptoms were as follows: tongue foul; temp. 100° ; pulse 110, feeble; frequent hiccup; nausea; anorexia; constipation; debility. During the next ten days, hiccup of a most distressing and obstinate character was the most prominent feature of the case. The contractions of the diaphragm were so violent as to shake the bedstead, and their sound could be heard all over the house. They often continued for hours together, and did not cease even with sleep, although of course they made it impossible to obtain deep and refreshing sleep. Taking or withholding food seemed to make no difference in the hiccup; but after four days, vomiting was added to the symptoms already mentioned. Hoping that by keeping the stomach empty the hiccup might subside, I now had the patient fed exclusively by enemata, but I could not see that that this made any difference in the violence or frequency of the hiccup, though the vomiting ceased. Creosote, bromides, nitro-glycerine, amyl nitrite, antipyrin, morphia, were all tried without material alleviation. The inhalation of chloroform alone controlled the violence of the spasms, and the patient's wife administered it whenever the attacks were more than usually violent. Occasionally, but not often, he would have two or three hours' rest from the hiccup after taking the chloroform. His other symptoms were profuse sweating, and rapidly increasing debility and emaciation. The temperature was never very high, varying from 100° to 102° . His mental faculties continued perfectly unclouded.

On the 14th July a crisis occurred. Diarrhœa set in, with profuse perspiration and great prostration, so much so that he had all the appearances of being near his end. The hiccup, however, suddenly and entirely ceased, and, as he rallied towards evening, I began to entertain some hopes of his recovery. Next day he seemed better and could take food, though the nutrient enemata were not relinquished, and quinine and brandy were administered freely. On the following morning, however, his breathing was noticed to be quick, and the bases of his lungs were found to be

hepatised. Already so exhausted, the patient could make but a feeble resistance against this fresh onslaught, and he died of pneumonia two days later, on July 18th. After the crisis on the 14th there was no return of hiccup or of diarrhoea, and the brain remained clear. No post-mortem examination was allowed.

The precise nature of this last case is, perhaps, even more obscure than that of either of the preceding ones. Nevertheless, I think it must be considered as one of septicæmia. The symptoms clearly commenced from the inhalation by the patient of the effluvium arising from the bullock's putrid leg, and his condition grew steadily worse from that moment until his death, twenty-three days later. As the poison entered the system by inhalation, and not by a wound, there was an absence of definitely localised mischief. What local symptoms were present were chiefly gastro-intestinal, but there was no evidence of abscess or other gross lesion. The prominence of hiccup was a curious feature of the case, as the exact significance of the symptom is not very clear. I have seen one other case in which hiccup was a leading symptom, contributing very materially by its exhausting character to ensure a fatal issue to the illness, but that was in a case of a totally different kind from the present one, viz. in an elderly man of intemperate habits suffering from meningitis. The alarming crisis which took place on the nineteenth day, accompanied by a cessation of the abdominal symptoms, and followed by the rapid development of pneumonia, was a noteworthy feature in this young man's illness, but I cannot pretend to offer a satisfactory explanation of the sequence of events in this strange case.

I must apologise for the imperfection of these rough notes, compiled chiefly from memory, and I am conscious that the cases narrated are unsatisfactory, because of the uncertain nature of the poisons which gave rise to the various symptoms in each instance, but I have thought that they might be worth narrating, as exemplifying the dangers to which we are all liable from the attacks of intangible but malignant foes.

REPORT

OF THE

AURAL DEPARTMENT

FOR THE YEAR 1889.

By RICHARD LAKE, F.R.C.S.,
CLINICAL ASSISTANT.

DURING the year there were 563 new out-patients, exclusive of renewed letters. No patient has been counted more than once, though he may have attended with a new letter on separate occasions. The cases of patients with mastoid or intra-cranial inflammation secondary to ear disease are not included in this report, as they appear in the general medical and surgical reports of in-patients.

The following is a list of the chief operations performed :—

	Male.	Female.	Total.
Operations on adenoid growths	12	6	18
Removal of aural polypi	19	6	25
Incision of meatal abscesses	6	3	9
Removal of tonsils	5	5	10
Incision of membrana tympani	1	3	4
Removal of nasal polypi	5	2	7
Curetting tympanum	1	3	4
Total	49	28	73

N.B.—The galvano-cautery was in constant use during the year for the treatment of throat and nose affections.

Of the 563 cases, 9 were affected with nasal polypi and ozæna uncomplicated with ear disease. Of the 554 ear cases the external ear was the seat of disease in 14·4 per cent., the middle ear in 80·1 per cent., and the internal ear in 5·5 per cent.

Of the middle ear cases there was suppurative catarrh in 52·3 per cent., and non-suppurative catarrh in 27·7 per cent.

	Males.	Females.	Remarks.
I. EXTERNAL EAR.			
Cerumen	34	19	
Eczema	2	4	
Inflammation of meatus	4	6	
Abscess of meatus	2	6	
Hæmatoma of auricle	1	—	
Aural exostosis	1	—	
Foreign bodies	1	—	
II. MIDDLE EAR.			
Acute meningitis	3	—	
Rupture of membrana tympani	9	1	
Acute otitis media :			
<i>a.</i> Without perforation	5	3	Including cases following acute nasal catarrh.
<i>b.</i> With perforation	3	2	
Chronic otitis media :			
<i>a.</i> With suppuration	111	119	
<i>b.</i> (Mucous catarrh)	47	31	Including 52 cases following chronic nasal catarrh, and 2 following ozæna.
Chronic dry catarrh	7	20	
Cicatricial membranes	1	4	
Syphilitic ulceration	1	—	
Tubercular ulceration	—	1	
Adenoid vegetations	22	17	These are grouped separately, and represent those operated on.
Caries of mastoid	2	2	
Septic thrombus of lat. sinus	1	—	
Aural polypi	8	11	
Eustachian obstruction (with- out other changes)	6	2	
Senile degeneration of mem- brane, &c.	3	1	
Otalgia	—	1	
III. INTERNAL EAR.			
Diseases of labyrinth, 8th nerve, and conducting apparatus :			
Menière's disease	1	—	
Syphilis (chiefly congenital)	7	4	
Degeneration of 8th nerve	9	3	
Hyperæsthesia of 8th nerve	4	1	

	Males.	Females.	Remarks.
III. INTERNAL EAR— <i>continued.</i>			
Nerve tinnitus	—	1	
As a sequela of acute rheumatism	2	—	Whether the disease was treated by salicin could not be discovered.
Hysteria	—	1	
Aural vertigo	5	2	
Cerebral deafness following meningitis	—	1	
Cerebral deafness following brain disease	1	1	1 case following epilepsy.
Deaf-mutism, hereditary . .	3	1	
„ acquired	1	1	

DESCRIPTION OF PLATE VII,

Illustrating Mr. Richard Lake's Report of the Aural Department.

No. 1.—Recent scar of M. T.; age sixteen, subject of adenoid vegetations. Perforation due to acute catarrh of middle ear, thirteen weeks ago.

No. 2.—Scar seven months old in lower posterior segment, due to a fall on the head. Patient is twenty-eight years old.

No. 3.—Scar four years old. Patient is sixteen years old, and four years ago the drum was ruptured in the upper anterior segment. He is stone deaf on that side from nerve disease.

No. 4.—Recent perforation due to a blow on the ear. The external meatus was so straight in this case that no speculum was required, and that also accounts for the perforation; the force of concussion not being checked, the air impinged directly on to the M. T.

No. 5.—Tuberculous perforation in a woman aged thirty-seven. The cavity of the tympanum is lined with greyish-yellow granulations. The perforation is of fourteen years' standing; is at last improving under solution of lactic acid, 6 per cent. Patient has pulmonary tuberculosis.

No. 6.—Minute central perforation, due to acute muco-purulent catarrh of middle ear, secondary to nasal catarrh of eight days' standing. Handle of malleus not visible.

No. 7.—Muco-purulent catarrh of tympanum; the mucus is higher at the posterior part, as is usually the case.

No. 8.—Two comma-like pieces of inspissated mucus in tympanum, and a scar in upper anterior segment.

No. 9.—Two calcareous plates. A variety of Politzer's half-moon plate.

No. 10.—A vascular adhesion of the M. T. in a plumber aged eighteen.

No. 11.—The M. T. of a man aged forty-nine, showing almost transverse folds of the membrane after forcible syringing for the removal of wax. He recovered after six months' treatment.

No. 12.—A drum in a man, showing local atrophic patches, the result of middle ear catarrh.



I



II



III



IV



V



VI



VII



VIII



IX



X



XI



XII

R E P O R T
OF THE
DEPARTMENT FOR DISEASES OF THE SKIN,
1889.

By H. C. LOW, M.A., M.B., B.C.,
AND
A. J. ADKINS, L.R.C.P., M.R.C.S.,
CLINICAL ASSISTANTS.

[illegible]

TABLE II.—*Ages in certain Groups.*

Disease.	-5.	5-10.	10-15.	-20.	-25.	-30.	-35.	-40.	-45.	-50.	-55.	-60.	-65.	-70.	-75.	-80.	Totals.
Eczema .	70	37	36	38	18	15	9	13	14	9	13	4	8	5	2	1	284
Psoriasis	2	7	10	9	12	8	2	4	0	2	1	1	0	0	0	0	58
Acne .	0	2	0	3	4	4	1	2	0	1	1	1	0	0	0	0	19
Alopecia	3	12	8	7	2	2	0	1	0	0	0	0	0	0	0	0	35
Urticaria	12	7	3	2	7	5	0	3	2	0	2	3	1	0	1	0	48

APPENDIX.

THE table shows an increase in the attendance in the department of 52 over the last year and of 97 over 1887.

The following notes are extracted from the reports of some of the more interesting cases.

1. *Lupus hypertrophicus*.—William B—, æt. 19, attended on the 19th May, 1889, with widely disseminated lupus.

The disease began fifteen years ago, following an abscess of traumatic origin upon the little toe of the right foot, and showing itself in the neighbourhood of an incision made for the evacuation of the pus. The new growth spread from this point, eventually implicating the whole limb. Five years ago an abscess appeared on the nape of the neck, and lupus shortly afterwards developed here also and upon the face. The family history is negative, and the patient, although weakly, has had no illness.

The boy is dark in complexion, somewhat undergrown and feeble in aspect, but there is no evidence of visceral disease. The right foot and leg are greatly swollen. The thigh as high as the groin and lower third of the buttock is covered with circinate areas of lupus, spreading by a tuberculated margin, and leaving a tissue, partly cicatricial, partly infiltrated with new growth. The leg and foot are similarly affected, but the integuments are more extensively thickened; the surface more dusky and tuberculated, and there is an absence of marginated areas. The movements of the joints are free, and the functional utility of the limb is not seriously impaired.

The face shows two large nearly symmetrical patches of ordinary lupus, one on either cheek, meeting below under the lower jaw, without however involving the chin or lip. A small circumscribed patch, partly cicatricial, is present upon the nape, on the site of the abscess from which the second attack of disease is said to have started.

The patient has been under treatment in various hospitals, but without good results. He was recommended for admis-

sion into the wards with a view to the inoculation of the leg with erysipelas, but after some delay he was removed into the country by his friends, and has not been heard of since.

2. *Dermatitis herpetiformis* in pregnancy (herpes gestationis). Annie J—, æt. 26, married, attended on the 27th December, 1888, with a bullous eruption on both arms.

The condition began three weeks since with severe local itching, followed by the appearance of small blebs, which enlarged to about the diameter of an inch or less, then burst and left thin adherent crusts. The patient was in the fifth month of her pregnancy, and stated that during a previous pregnancy six years ago a similar but less severe attack occurred in the seventh month, subsiding at the end of about four weeks.

Both forearms and the lower portion of the upper arms present an erythematous surface with scattered vesicles in various stages of progress, and crusts and scales indicating the position of former blebs; there is severe itching especially at night, but the health is not affected.

Progress.—The patient was treated locally with a weak carbolic acid ointment, and slowly improved, despite one or two relapses. In April, blebs appeared on the right pinna and chin, but gave little trouble. The confinement took place in May, but the erythema and itching persisted for about a month after this, then gradually but completely subsided.

3. *Lichen planus* supervening upon psoriasis. Martha B—, æt. 19, married, attended on the 7th June, 1889, with a papular eruption upon the arms.

The patient had been subject to psoriasis since the age of seven, the attacks occurring yearly in spring and autumn, and affecting chiefly the extensor aspects of the elbows and knees. This year however the usual complaint did not develop, but in April the present condition made its appearance.

The eruption consists of characteristic spots of *Lichen planus* scattered about the flexor aspects of the wrist and forearms, attended by severe itching. The elbows and knees are free from disease. The general health is good,

but the patient suffered between the ages of twelve and seventeen from disease of the tibia, probably tubercular. Her father is subject to gout.

4. *Canities following alopecia*.—Sarah C—, æt. 14, attended on the 21st June, 1889. The patient was attacked by alopecia in June, 1888, and lost the hair over the greater part of the head. Six months later the hair began to grow strongly over the denuded area, but was quite white. Her health has been good, and she has not been subject to neuralgia. The hair is of good length, black as far as the coronal suture and over the right temporal region, but the new growth is of snowy whiteness, although as strong as that which had retained its pigment.

5. *Canities with leucoderma*.—John W—, æt. 15, attended on the 24th July, 1889. The patient had been in somewhat feeble health from childhood, and suffered a good deal from headache until about three years ago. As the liability to pain in the head subsided he noticed that the hair began to turn white in patches. He has never had ringworm or alopecia. The unaffected hair is black.

There are now several patches of white hair of different sizes and shapes and irregularly distributed, and areas of leucoderma surrounded by a slight increase of pigment are present upon the portion of the neck adjacent to the scalp. The condition is said to be quite stationary. The general health is now fairly good.

6. *Adenoma sebaceum* (?) of chin.—Florence T—, æt. 22, married. Attended on the 23rd August, 1889, on account of a chronic papillated condition of the chin. The disease began ten years ago in the form of a rough slightly elevated patch, which slowly spread. It has usually been unattended with irritation, but subject to occasional attacks of hyperæmia. The patient is liable to indigestion, but has never suffered from acne or seborrhœa. She is a dark subject, and apparently of average intelligence.

The affected area is irregular in outline, and involves the whole of the chin and a portion of the lower lip. It presents

a number of papular elevations about the size of millet seeds, closely set but discrete, and of the normal colour of the skin. The skin is otherwise quite healthy. The patient declined to allow a portion of the skin to be removed for examination.

The case resembled closely that published by Dr. Pringle in the 'British Journal of Dermatology,' January, 1890; but in the absence of histological evidence, it is difficult to make a positive diagnosis from the condition of the sub-oriparous glands described under the name of Hydradenoma by Darier and others. It is probable, as suggested by Dr. Pringle, that both sets of glands may be simultaneously affected.

7. *Ulerythema sycosis*.—William C—, æt. 64, attended on the 4th of April, 1889, with a pustular eruption on the upper lip, cheeks, and chin. The condition began six months before with an eruption of pustules upon the upper lip. This extended quickly to the hairy parts of the cheeks and chin, and as it spread the hair fell from the parts first attacked, leaving an elevated, dusky-red, margined erythematous patch, which in turn gave way to a depressed white cicatrix.

On admission the left cheek was completely denuded of whiskers and covered with an irregular white cicatrix. The left half of the upper lip was erythematous and tuberculated, and retained only a few scattered hairs. On the right side of the face the eruption presented the characters of ordinary but severe sycosis, with pustulation and formation of yellowish crusts.

Directions were given for preliminary treatment, but the patient did not return, and there has since been no opportunity of observing the progress of the condition.

This case differs from ordinary examples of sycosis in its severe and rapid course, in the tuberculated inflammation persisting after the disappearance of the pustules and loss of hair, and in the ultimate destruction of the cutaneous structures and their replacement by cicatricial tissue. The term *ulerythema sycosis*, devised by Unna, appears to be a serviceable one to distinguish the condition from the relatively benign affection usually dealt with under the name of "sycosis." It is indeed probable that despite the resem-

blance between the two sets of cases in their early stages, they are pathologically distinct.

8. *Prurigo of Hebra*.—The following appears to be a fairly typical example of the condition described by Hebra as “prurigo.” Alfred S—, æt. 14, was admitted on the 12th October, 1888, with an eruption of scattered papules involving nearly the whole body. The spots were of about the size of millet seeds, moderately elevated, and of a pale rose colour. Intermingled with these were excoriations and pustules, evidently due to scratching. There were no urticarial lesions, nor had anything of the kind been observed by the patient or his friends.

The condition is said to have existed ever since early infancy, fluctuating considerably, but always worse in summer; itching was very severe, especially at night. The general health was rather feeble, but there was no indication of organic disease. Family history was negative.

The irritation was relieved to some extent by the use of an oleate of zinc ointment, and the health was improved by tonics, but after a few weeks the patient ceased to attend.

W. A.



REPORT OF

THE MIDWIFERY DEPARTMENT

FOR 1889.

BY ROBERT CORY, M.A., M.D., F.R.C.P.

THE RESIDENT ACCOUCHEURS FOR THE YEAR WERE MESSRS. H. B. LUARD,
E. C. STABB, F. FAWSETT, G. R. ANDERSON, AND G. E. ANSON.

FROM the 1st of January, 1889, to the 31st of December, 1889 (both dates inclusive), 2240 women were attended. Of these, 2216 resulted in single births, and 24 in twin births. There were 17 cases of abortion among the single births.

In the following table the presentations of the children are classified :

	Among the single births.	Among the twin births.	Total.
Vertex	2132	41	2173
Breech	35	4	39
Superior extremities, including the shoulder	4	1	5
Head and hand	9	0	9
Inferior extremities, mixed, foot and hand	12	2	14
Face	5	0	5
Abortions	17	0	17
Prolapsed cord	2	0	2
	2216	48	2264

Of the 2240 cases attended,

345 were 1st confinements.

327	„	2nd	„
321	„	3rd	„
266	„	4th	„
258	„	5th	„
187	„	6th	„
173	„	7th	„
130	„	8th	„
86	„	9th	„

65 were 10th confinements.

39	„	11th	„
18	„	12th	„
15	„	13th	„
7	„	14th	„
3	„	15th	„
2240			

The following table shows the number of women confined at each successive year of life; the youngest mother was 16, and the oldest 47 years of age:

At the age of	No. of women confined.	At the age of	No. of women confined	
16	...	33	...	100
17	...	34	...	77
18	...	35	...	79
19	...	36	...	70
20	...	37	...	73
21	...	38	...	61
22	...	39	...	51
23	...	40	...	38
24	...	41	...	17
25	...	42	...	21
26	...	43	...	11
27	...	44	...	8
28	...	45	...	6
29	...	46	...	2
30	...	47	...	1
31	...			
32	...			
				2240

The FORCEPS were used in 28 cases. The reasons given for their use may be tabulated as follows:

Delay during 1st stage of labour.	.	.	15	{	5 contracted pelves.
					1 large head.
					1 placenta prævia.
					8 inertia.
Delay during 2nd stage of labour	.	.	23	{	11 tedious.
					2 occipito-posterior.
					10 not stated.

There were 9 cases of primiparæ among the 28 forceps

cases, and 4 cases of rupture of the perineum are reported, all of which happened among the primiparæ.

PLACENTA PRÆVIA.

Six cases of placenta prævia are reported as having occurred during the year.

No.	Age of mother.	Confinement.	Sex of child.	Treatment.	Result to mother.	Result to child.	Placental position.
1814	25	4th	M.	Not stated	Recovered	Stillborn	—
1887	35	10th	F.	Turning	Died	„	Central
2019	36	9th	F.	Not stated	Recovered	„	Marginatis
2804	36	9th	M.	„	„	„	—
2965	27	4th	M.	Turning	„	„	—
3155	35	9th	F.	Not stated	„	„	Marginatis

The BREECH presented in 35 cases among the single births, which gives a proportion of 1 in every 64. In 10 of these cases the children were stillborn, which is equivalent to a death-rate of 28·5 per cent.

There were 2 cases of craniotomy during the year. The following table gives the particulars :

No.	Age.	Confinement.	Reason for operation.	Result to mother.
1198	30	3rd	Rachitic pelvis	Recovered
2720	22	2nd	„	„

Two maternal deaths are recorded during the year.

No.	Age.	Confinement.	Sex of child.	Result to child.	Interval between death of mother and birth of child.	Causes.
1887	35	10th	F.	Stillborn	A few minutes after she had given birth	Hæmorrhage
2547	38	8th	F.	„	A few hours	Ruptured uterus

This gives a death-rate of .089.

OF THE CHILDREN.—The number of children born among the 2240 women attended during the year was 2264, there being 24 cases of twin births. The sex of 2256 of them were—males 1177, females 1079. The sex of 8 is not stated.

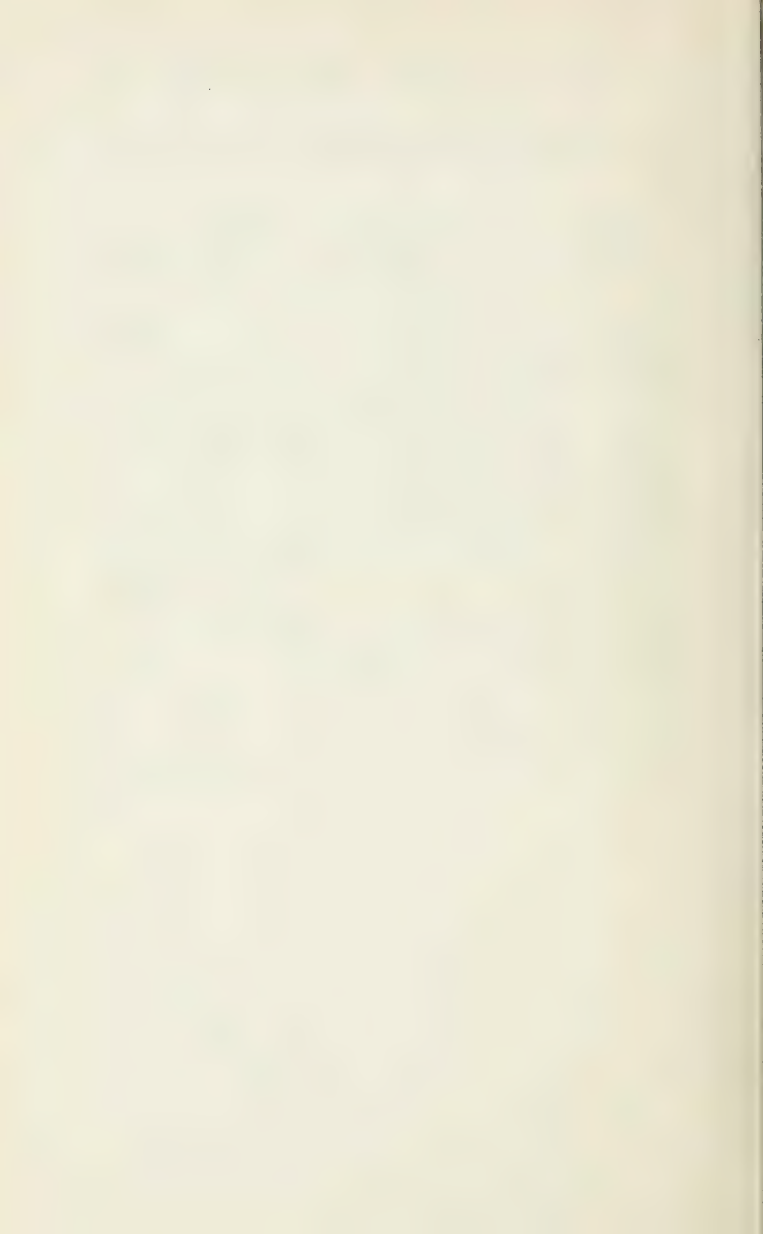
There were 87 stillbirths, or 1 in 25.7 labours, or 3.8 per cent.

The characters of the labours in which the stillbirths occurred are given below :

Natural labours, including cases of intra-uterine maceration	23
Abortions	17
Premature	7
Breech	10
Craniotomy	2
Twins	6
Funis presentations	4
Forceps	4
Footlings	4
Placenta prævia	6
Shoulder presentations	2
Elbow	1
Rupture of the uterus	1

The following table gives particulars of the cases of twin births :

No.	Age of mother.	No. of confinement.	Date of birth.	Sex.		Result to mother.	Result to children.		Presentations.		Condition of placenta.
				1st.	2nd.		1st.	2nd.	1st.	2nd.	
791	41	13	Jan. 27	M.	F.	R.	S.	L.	Vertex	Vertex	Not stated
896	22	3	March 28	M.	M.	R.	S.	S.	"	"	"
951	32	7	Jan. 13	F.	F.	R.	L.	L.	"	"	"
976	37	7	April 15	F.	F.	R.	L.	L.	"	Footling	"
1140	37	11	March 24	M.	F.	R.	L.	L.	"	Vertex	"
1241	19	1	Jan. 23	F.	F.	R.	L.	L.	"	"	"
1295	24	1	May 30	F.	F.	R.	L.	L.	Not stated	Not stated	"
1321	33	1	June 19	M.	M.	R.	L.	L.	Vertex	Vertex	"
1620	34	8	May 21	M.	M.	R.	L.	L.	"	Breech	"
1912	28	5	April 23	M.	M.	R.	L.	L.	"	Vertex	"
1992	24	3	July 3	F.	F.	R.	L.	L.	"	"	"
1994	32	5	July 3	M.	F.	R.	L.	L.	"	Breech	"
2129	27	2	June 11	F.	F.	R.	L.	L.	"	Vertex	"
2200	36	10	Aug. 21	M.	F.	R.	S.	L.	Transverse	Breech	Two placentas
2258	36	8	July 5	F.	F.	R.	L.	L.	Vertex	Vertex	Not stated
2471	?	3	July 8	M.	F.	R.	S.	S.	?	?	"
2729	39	7	Oct. 23	M.	F.	R.	L.	L.	Vertex	Vertex	"
2742	21	2	Nov. 7	F.	F.	R.	L.	L.	"	"	"
2755	20	1	Oct. 18	M.	F.	R.	L.	L.	"	"	"
2951	26	2	Nov. 22	M.	F.	R.	L.	L.	"	"	"
3007	28	6	Nov. 11	M.	F.	R.	L.	L.	"	Breech	"
3068	36	10	Dec. 5	M.	M.	R.	L.	L.	"	Footling	"
3144	28	3	Nov. 30	M.	F.	R.	L.	L.	?	?	"
3145	36	9	Nov. 12	M.	F.	R.	L.	L.	Vertex	Vertex	"



MEDICAL AND SURGICAL REPORTS.



MEDICAL REPORT.

1889.

By HECTOR W. G. MACKENZIE, M.A., M.D., M.R.C.P.,
MEDICAL REGISTRAR.

TABLE I.—*General Statement of Medical and Surgical Patients.*

		Males.		Females.	Total.
Number of patients in Hospital, Jan. 1st, 1889	...	189	...	164	353
" " " Dec. 31st, 1889	...	199	...	165	364
" " discharged or died during 1889:					
		Males.		Females.	Total.
Cured	...	1529	...	1124	2653
Relieved	...	583	...	540	1123
Unrelieved or other causes	...	119	...	118	237
Died	...	290	...	242	532
		2521		2024	4545
Average number of days of each medical patient's stay in hospital—26·5.					
" " surgical					31·6.

TABLE II.—*General Medical Statement.*

Number of Medical Beds ¹ ...	...	...	...	...	171
			Males.	Females.	Total.
Number of patients in Medical Wards, Jan. 1st, 1889	...	73	...	70	143
" " admitted during the year 1889	...	929	...	898	1827
Total	...	1002	...	968	1970
" " in Medical Wards, Dec. 31st, 1889	...	76	...	73	149
" " treated to a termination during 1889	...	926	...	895	1821
" " discharged or died during 1889:					
		Males.		Females.	Total.
Cured	...	421	...	428	849
Relieved	...	286	...	274	560
Unrelieved or other causes	...	26	...	24	50
Died	...	193	...	169	362
Total	...	926	...	895	1821
Average number of days of each patient's stay in hospital—26·5.					

¹ This does not include 21 beds in Adelaide Ward, the statistics of which are given in the Report of the In-patient Department for Diseases of Women (p. 137).

TABLE III.—*General*

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year
I. GENERAL DISEASES.																				
Rötheln	2	2	...	1	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...
Measles	8	4	4	4	3	...	1	...	...	...	...	1	3	3	1	...	...	...	...	...
Varicella	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Scarlet fever	31	18	13	14	5	5	7	...	...	...	...	4	1	2	23	1	...	...	...	...
Enteric fever	46	23	23	1	6	16	17	5	1	...	...	2	4	8	27	5	...	...	...	...
Febricula	4	...	4	2	1	...	1	...	...	...	...	1	...	3	...	...	...	...	...	...
Influenza	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Fever	2	2	...	...	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...
Erysipelas	16	2	14	1	1	7	4	1	2	...	...	1	1	4	...	...	...	...	...	...
Diphtheria	176	77	99	113	47	10	5	1	...	...	...	78	36	39	21	2	...	...	...	...
Post-diphtheritic paralysis	10	8	2	1	3	3	2	1	...	...	...	1	...	2	4	3	...	...	...	...
Mumps	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Pertussis	7	2	5	5	1	1	...	...	...	...	...	4	...	3	...	...	...	...	...	...
Syphilis	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Leprosy	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Intermittent fever	2	2	...	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	...	...
Pyæmia	4	1	3	...	...	1	2	...	1	...	...	1	...	1	2	...	...	...	...	...
Farcy	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Hydrophobia	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Acute rheumatism	78	40	38	...	4	25	33	12	3	1	...	4	16	41	13	4	...	...	...	...
Chronic articular rheumatism	6	2	4	...	...	...	1	2	2	...	1	...	...	3	1	2	...	...	...	...
Rheumatic pains	16	4	12	...	1	5	4	3	3	...	...	8	6	2	...	...	...	...	...	...
Gonorrhœal rheumatism	4	2	2	...	...	1	2	...	1	...	...	...	...	1	2	1	...	...	...	...
Synovitis	3	1	2	...	...	1	1	...	...	1	...	...	...	1	2	...	...	...	...	...
Gout	5	5	...	...	...	...	...	1	3	1	...	1	2	...	2	...	...	...	...	...
Rickets	13	9	4	13	...	...	...	...	...	...	...	6	...	2	5	...	...	...	...	...
Myxædema	2	...	2	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...
Cretinism	1	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Diabetes insipidus	1	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Diabetes mellitus	16	8	8	1	1	4	4	1	2	1	2	3	4	1	3	5	...	...	...	...
Purpura	6	4	2	1	2	3	...	...	...	...	...	2	...	4	...	...	...	...	...	...
Hæmophilia	1	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Anæmia	32	1	31	...	13	15	2	2	...	...	...	2	6	17	4	3	...	...	...	...

Table of Diseases.

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
2	...	...	...	...	...	...	...	1 house physician.
4	3	...	...	...	...	1	...	P.M. in fatal case negative.
1	...	...	...	...	...	...	...	
14	11	1	1	...	...	3	1	18 of these arose in the hospital; 2 nurses, 1 house physician, 1 student. 11 cases occurring in diphtheria are not included.
18	21	...	...	...	...	5	2	1 a probationer. Of the fatal cases, perforation in 3, hæmorrhage in 1, no P.M. in 1.
...	4	...	...	...	...	...	...	1 a nurse.
1	...	...	...	...	...	...	...	
...	...	...	...	...	...	2	...	Fever of doubtful nature. P.M. negative in 1; only hypostatic pneumonia in other.
1	13	...	...	...	...	1	1	All facial. No P.M. in 1, an infant; contracted granular kidneys in the other fatal case.
44	47	...	...	...	...	33	52	Tracheotomy in 75 cases, of which 19 recovered, or over 25 per cent. Intubation in 6 cases, of which 1 recovered and 5 died, in 4 of the latter tracheotomy having been performed subsequently to the intubation. Paralysis was observed in 27 of the cases which recovered, or in over 29 per cent., and in 23 of the fatal cases, or in 27 per cent. 13 cases contracted scarlet fever, of which 7 died.
7	1	1	...	...	1	...	...	1 readmission.
...	1	...	...	...	...	...	...	
...	...	2	2	...	2	...	1	Congestion of lungs in fatal case.
...	...	1	...	...	...	...	...	
...	...	1	...	...	...	...	...	
2	...	...	...	...	...	...	...	
...	1	...	...	...	...	1	2	1 a stable boy, (?) glanders. See Special Abstracts, p. 344.
1	...	...	...	...	...	...	...	
...	...	...	...	...	...	1	...	P.M. negative. See Special Abstracts, p. 343.
37	38	2	...	...	1	...	...	2 were readmissions during the same attack. 36 were cases of 1st attack, 23 of 2nd, 7 of 3rd, and the remainder of 4th or other attack. Pericarditis in fatal case.
...	...	2	4	...	...	...	...	
4	9	...	3	...	...	...	...	1 readmission.
...	2	2	...	...	...	...	...	
...	1	1	1	...	...	...	...	
3	...	2	...	...	...	...	...	
...	...	5	1	...	...	4	3	Peritonitis in one of the fatal cases.
...	...	2	...	...	...	...	...	
...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	
...	6	3	1	...	...	1	5	Of the fatal cases: no P.M. in 1, phthisis in 2, P.M. negative in 2, mitral disease in 1. Knee-jerks absent in 3 cases.
3	1	1	...	...	...	1	...	In fatal case gangrenous ulceration of soft palate and tonsil.
...	1	...	...	...	...	...	...	
1	13	...	16	...	1	...	1	Menorrhagia and slight intestinal hæmorrhage in fatal case.

TABLE III—

DISEASE.	Number of cases.		Age.								Duration of residence.								
	Total.	M. F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
I. GENERAL DISEASES — <i>con- tinued.</i>																			
Pernicious anæmia . . .	2	2					1	1			1	1							
Leucocythæmia . . .	5	4	1			2	3					1	2	1	1				
Lymphadenoma . . .	2	1	1		1	1						1				1			
General tuberculosis . . .	8	6	2	4	1	1	1	1			5	1		2					
Disseminated malignant disease . . .	3	2	1		1		1		1			1	2						
General dropsy . . .	3	2	1					2		1		2	1						
II. DISEASES OF THE SKIN.																			
Erythema . . .	6	5	1	3	1		2				3	3							
Erythema nodosum . . .	2		2		1		1						2						
Urticaria . . .	1		1		1							1							
Eczema . . .	5	2	3		1	1	1		1				3	2					
Exfoliative dermatitis . . .	1		1							1				1					
Pruritus vulvæ . . .	1		1					1						1					
Pemphigus . . .	3		3		3								2	1					
Scleroderma . . .	1	1		1											1				
Lupus . . .	1		1		1									1					
Elephantiasis . . .	1		1					1						1					
Pigmentation . . .	1		1		1									1					
Subcutaneous nodules . . .	1		1							1			1						
III. DISEASES OF THE RESPI- RATORY ORGANS.																			
Acute laryngitis . . .	9	4	5	1	5		1	2			4	3	1	1					
Syphilitic laryngitis . . .	1		1					1								1			
Tubercular laryngitis . . .	1	1		1							1								
Paralysis of left vocal cord . . .	1	1					1						1						
Abductor paralysis . . .	1		1					1						1					
Malignant disease of la- rynx . . .	4	3	1					1	1	2				2	1		1		
Laryngeal web . . .	1		1					1			1								
Hysterical aphonia . . .	2		2				2						1	1					
Bronchitis . . .	52	22	30	14		2	8	5	8	9	6	10	12	18	10	2			
Bronchiectasis . . .	1	1							1			1							
Broncho-pneumonia . . .	15	8	7	14	1							4	3	7	1				

continued.

Cured.			Re-lieved.			Unre-lieved.			Died.		REMARKS.
M.	F.		M.	F.		M.	F.		M.	F.	
...	1	...	...	...	...	...	...	...	1	...	Mitral disease in fatal case.
...	4	1	...	...	...	...	...	...	1	...	1 male readmitted twice.
...	...	...	...	...	...	...	...	...	1	1	Spleen and lymphatic glands affected in both. Considerable excess of leucocytes in blood in 1.
...	2	...	...	...	...	...	...	4	2	...	No P.M. in 1.
...	...	...	...	...	...	...	...	2	1	1	1 secondary to scirrhous of breast; amyloid disease of spleen in 1.
...	2	1	...	...	...	...	...	...	...	...	
5	1	...	...	...	...	...	...	...	...	...	3 secondary to burns.
...	2	...	...	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	
1	3	1	...	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	
...	1	...	2	...	...	...	...	...	...	...	2 readmissions.
...	1	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	
2	4	...	...	...	...	...	...	2	1	...	Necrosis of cricoid cartilage in one of fatal cases, (?) enteric fever, see Special Abstracts, p. 345; ulceration of tonsils and bronchopneumonia, (?) diphtheria in another.
...	...	...	1	...	...	...	...	...	...	...	
...	...	...	...	1	...	...	...	...	...	...	(?) Aneurysm of aorta.
...	...	...	1	...	...	...	...	...	...	...	
...	...	...	1	2	...	...	...	1	...	...	Tracheotomy in fatal case. P.M.—Disseminated malignant disease.
...	...	...	...	1	...	...	...	...	...	...	
...	2	...	...	...	...	...	...	...	...	...	
12	15	8	10	1	1	1	1	4	...	...	Aortic disease in 2. Of the fatal cases: rickets in 1, emphysema in 2, pneumonia in 1.
...	...	1	...	...	...	...	...	...	...	...	
6	2	...	...	...	...	...	...	2	5	...	No P.M. in 2. Rickets in 1; pericarditis and meningitis in 1; tuberculosis in 1.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year	
III. DISEASES OF THE RESPIRATORY ORGANS — <i>continued.</i>																					
Acute pneumonia . . .	81	65	16	15	16	19	12	11	6	1	1	12	23	37	8	1	...	...	...	...	
Chronic pneumonia . . .	1	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Emphysema . . .	3	...	3	...	...	...	...	...	3	...	...	...	...	3	...	...	...	...	...	...	
Phthisis . . .	63	41	22	1	3	9	16	14	15	4	1	11	11	19	15	7	...	...	...	...	
Hæmoptysis . . .	7	6	1	...	...	2	1	4	...	...	...	2	2	2	1	...	...	...	...	...	
Pleurisy . . .	38	23	15	...	4	11	4	8	9	2	...	1	4	22	10	1	...	...	...	...	
Pleuritic adhesions . .	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Empyema . . .	18	17	1	4	3	1	2	3	2	...	3	1	...	2	5	8	...	1	1	...	
Intra-thoracic tumour .	4	3	1	...	...	...	1	1	1	1	...	1	...	1	2	...	...	...	...	...	
Gangrene of lung . . .	2	2	...	...	...	...	1	1	...	...	...	...	1	...	1	...	...	...	...	...	
Edema of lungs . . .	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	
Asthma . . .	4	1	3	...	...	...	2	...	2	...	...	...	1	1	2	...	...	...	...	...	
Dyspnœa . . .	2	2	...	1	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	
IV. DISEASES OF THE ORGANS OF CIRCULATION.																					
Pericarditis . . .	5	1	4	...	2	2	...	1	...	...	...	1	...	2	2	...	...	...	...	...	
1. <i>Valvular disease.</i>																					
Mitral . . .	66	21	45	...	5	18	16	13	7	5	2	2	11	20	22	10	1	...	...	...	
Aortic . . .	9	9	...	...	...	...	1	5	2	1	...	2	1	3	2	1	...	...	...	...	
Aortic and mitral . . .	21	15	6	...	6	9	3	1	1	1	...	3	2	4	7	3	1	1	...	...	
2. <i>Heart.</i>																					
Malformation . . .	2	2	...	1	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	
Interstitial myocarditis .	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	
Angina pectoris . . .	7	7	...	...	...	...	1	...	5	1	...	2	...	2	2	1	...	...	...	...	
Dilatation . . .	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	

continued.

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
59	15	...	...	...	...	6	1	41 on the right side, of which in 11 the whole lung was affected, in 10 the upper lobe, in 2 the middle, and in 18 the lower lobe; 32 on the left side, of which in 3 the whole lung was affected, in 2 the upper lobe, and in 27 the lower lobe; 6 were double; 2 doubtful. Of the fatal cases: 1 was double, 2 were apical, in one of which hyperpyrexia occurred, 3 were basic, and 1 involved the whole lung.
...	...	...	1	...	...	...	...	
...	...	...	2	...	...	...	1	
...	20	16	2	...	19	6	6	Of the fatal cases: no P.M. in 2, in 17 both lungs were affected, in 4 the larynx and in 5 the intestines were ulcerated; 2 were fatal from hæmorrhage, 2 from perforation of intestine, 3 from pneumothorax. In 1 there was disease of aortic valve.
6	1	...	...	...	...	...	...	
19	14	3	1	...	...	1	...	Fatal case, tubercular. 22 on right side, 15 on left, 1 double.
...	...	1	...	...	...	...	...	
12	1	2	...	...	...	3	...	2 were readmissions. 7 on the right side, 11 on left. Resection of ribs in 11; Estlander's operation in 2. Of the fatal cases: 1, a child, died from shock after Estlander; 1, a chronic case, from hæmorrhage into pleural cavity before operation.
...	...	1	...	...	...	2	1	Sarcoma of bronchial glands in 2; growth in left pleura and lung in 1.
...	...	...	...	...	...	2	...	1 due to presence of collar stud in right bronchus, see Special Abstract, p. 346. Excision of ribs performed in 1.
...	...	...	...	...	...	1	...	Died a few hours after admission. Cystic kidneys.
...	...	1	3	...	...	...	...	
...	...	2	...	...	...	...	...	Cause obscure.
...	3	...	...	...	...	1	1	1 readmission. Of the fatal cases: contracted granular kidneys in 1, the other the result of rheumatic fever.
...	18	34	...	...	...	3	11	7 readmissions. Of the fatal cases: stenosis in 7, adherent pericardium in 1, cerebral embolism in 1, renal calculus in 1.
...	5	...	...	...	...	4	...	
...	7	3	...	...	...	8	3	1 readmission. No P.M. in 1, adherent pericardium in 1, mitral stenosis in 3.
...	1	...	...	...	...	1	...	
...	...	...	...	...	...	1	...	
...	7	...	...	...	...	...	...	Aortic disease in 1.
...	...	...	...	...	...	1	...	Hypertrophy and dilatation right side, no valvular disease.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
IV. DISEASES OF THE ORGANS OF CIRCULATION— <i>continued.</i>																				
Ulcerative endocarditis	10	5	5	1	1	2	1	4	1	...	...	1	2	1	1	4	1	...	...	...
3. <i>Vessels.</i>																				
Thoracic aneurysm	13	13	...	...	...	...	1	3	5	2	2	2	...	3	7	1	...	...	...	...
Abdominal aneurysm	2	2	...	...	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	...
Thrombosis	7	2	5	...	...	2	1	2	2	...	...	...	...	2	5	...	...	...	...	...
V. DISEASES OF THE DUCT- LESS GLANDS.																				
Exophthalmic goitre	5	...	5	...	...	1	1	2	1	...	...	...	...	1	3	1	...	...	...	...
Enlargement of thyroid	1	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Enlargement of spleen	2	...	2	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...
VI. DISEASES OF THE DIGES- TIVE ORGANS.																				
1. <i>Alimentary canal.</i>																				
Tonsillitis	35	12	23	1	3	12	16	2	1	...	...	17	13	5	...	...	...	...	...	...
Pharyngitis	3	1	2	...	...	1	2	...	...	...	...	1	1	...	1	...	...	...	...	...
Stricture of œsophagus	9	9	...	...	...	...	...	...	3	2	4	1	1	3	4	...	...	...	...	...
Dysphagia	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Dyspepsia	23	5	18	...	...	1	9	3	4	5	1	2	10	7	4	...	...	...	...	...
Gastric ulcer	20	7	13	...	...	2	9	3	4	2	...	2	...	8	5	4	1	...	...	...
Hæmatemesis	6	4	2	...	...	1	...	1	2	1	1	...	2	2	1	1	...	...	...	...
Vomiting	11	3	8	...	...	1	4	2	4	...	...	...	3	4	2	...	1	1	...	...
Malignant disease of sto- mach	10	8	2	...	...	...	1	2	3	4	...	1	2	4	3	...	...	...	...	...
Gastro-intestinal catarrh	5	1	4	5	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...
Diarrhœa	28	16	12	13	1	3	4	1	2	4	...	13	6	5	4	...	...	...	...	...
Intestinal hæmorrhage	2	2	...	...	...	...	...	...	2	...	...	...	...	1	1	...	...	...	...	...
Dysentery	3	3	...	...	...	1	...	1	1	...	...	1	1	...	1	...	...	...	...	...
Colic	12	9	3	1	...	1	4	2	2	2	...	2	5	4	1	...	...	...	...	...
Constipation	32	18	14	1	2	10	12	4	1	1	1	15	12	5	...	...	...	...	...	...
Intussusception	4	3	1	3	...	...	...	...	...	...	1	1	...	3	...	...	...	...	...	...
Obstruction	4	3	1	...	...	1	1	...	1	1	...	3	...	...	1	...	...	...	...	...
Strangulated inguinal her- nia	1	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.										
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year	
VI. DISEASES OF THE DIGESTIVE ORGANS— <i>continued.</i>																					
Malignant disease of intestines	8	3	5	...	...	1	...	3	1	3	...	1	...	...	5	2	...	...	...	...	
Tubercular ulceration of intestine	1	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Perityphlitis	18	10	8	...	...	7	8	3	...	...	...	1	4	6	7	...	...	...	...	...	
Perforation of vermiform appendix	3	2	1	...	...	2	1	...	...	...	...	3	...	...	...	...	...	...	...	...	
2. <i>Peritoneum.</i>																					
Acute peritonitis	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Pelvic peritonitis	2	...	2	...	...	...	1	1	...	...	...	...	...	1	...	1	...	...	...	...	
Chronic peritonitis	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	
Tubercular peritonitis	11	5	6	3	5	2	1	...	...	...	...	1	2	...	3	5	...	...	...	...	
Malignant disease	2	...	2	...	...	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	
3. <i>Liver.</i>																					
Cirrhosis	28	9	19	...	...	...	1	14	11	2	...	10	5	9	4	...	...	...	...	...	
Abscess	2	2	...	...	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	...	
Enlargement	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	
Syphilitic disease	3	1	2	...	...	...	1	2	...	...	...	...	...	...	3	...	...	...	...	...	
Malignant disease	5	3	2	...	...	...	...	2	2	...	1	1	1	2	1	...	...	...	...	...	
Pylephlebitis	3	3	...	...	...	...	3	...	...	...	...	2	...	1	...	...	...	...	...	...	
Biliary colic	2	...	2	...	...	...	...	1	...	1	...	...	1	1	...	...	...	...	...	...	
Obstructive jaundice	11	5	6	2	...	...	1	3	2	...	3	2	...	5	3	1	...	...	...	...	
4. <i>Various.</i>																					
Abdominal tumour	17	7	10	1	...	...	1	4	3	5	3	2	2	5	6	2	...	...	...	...	
Ascites	19	12	7	...	...	1	3	3	3	9	...	3	5	3	8	...	...	...	...	...	
VII. DISEASES OF THE GENITO-URINARY SYSTEM.																					
Acute nephritis	22	14	8	3	...	5	11	2	...	1	...	2	1	9	6	4	...	...	...	...	

continued.

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	1	2	...	...	2	3	Rectum affected in 3, of which in 2 colotomy, 1 relieved, 2 died, 1 without operation. Sigmoid flexure affected in 1, relieved by colotomy; hepatic flexure in 1, died after abdominal section; ascending colon in 1, with perityphlitic abscess and secondary peritonitis; cæcum in 2.
...	...	...	...	...	...	1	...	
9	8	...	1	...	...	...	...	Abscess incised and drained in 3.
...	...	...	...	...	...	2	1	Abdominal section performed in 2. Acute peritonitis in all.
...	1	...	...	...	...	...	...	Incision and drainage.
...	2	...	...	...	...	...	1	P.M.—Ulcer of rectum.
...	3	2	1	...	...	3	2	No P.M. in 1.
...	...	...	...	...	...	...	2	
...	...	4	19	...	...	5	...	1 female admitted three times, 1 admitted eleven times, and 1 admitted five times for paracentesis. Of the fatal cases: contracted granular kidneys in 1, old hydatid in 1, hæmorrhage from paracentesis in 1.
...	...	1	...	...	...	1	...	The case relieved of old standing. The fatal case secondary to ulcer of stomach.
...	1	1	...	1	...	...	...	2 cases cured by iodide of potassium.
...	...	...	...	1	...	2	2	Of the fatal cases: no P.M. in 1, which was secondary to malignant disease of rectum.
...	...	...	...	...	...	...	3	Acute peritonitis also in 1. See Special Abstracts, p. 348.
...	2	...	...	...	...	...	...	
...	2	3	4	...	...	2	...	Of the fatal cases: 1, in an infant of 3 weeks, P.M. negative; 1 obstruction by gall-stones, adherent pericardium also. 4 others probably due to gall-stones. In 1 xanthelasma; in 1 liver much enlarged.
...	...	4	8	2	2	1	...	7 probably malignant, 1 syphilitic, 1 tubercular. 2 probably spleen, 1 probably ovarian. No P.M. in fatal case.
...	1	11	7	...	...	...	...	1 admitted eight times, 1 twice.
6	4	6	2	1	1	1	1	3 scarlatinal. No P.M. in fatal cases. Alcoholic history in 4.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year
VII. DISEASES OF THE GENITO-URINARY SYSTEM—continued.																				
Chronic nephritis	27	18	9	...	...	4	5	3	10	4	1	5	2	7	8	5	...	...	...	...
Temporary albuminuria	3	1	2	...	...	1	2	...	...	...	...	...	...	2	1	...	...	...	...	...
Malignant disease of kidney	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tubercular disease of kidney	2	...	2	...	...	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Renal colic	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Renal calculus	3	1	2	...	...	...	...	2	...	1	...	2	...	1	...	...	...	...	...	...
Hæmaturia	2	1	1	...	1	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Paroxysmal hæmaturia	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Pyelitis	3	3	...	...	...	2	...	...	...	1	...	...	1	2	...	...	...	...	...	...
Hydronephrosis	2	2	...	...	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Pyonephrosis	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Cystitis	2	1	1	...	...	...	...	...	2	...	...	1	...	...	1	...	...	...	...	...
Incontinence of urine	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
VIII. DISEASES OF THE NERVOUS SYSTEM.																				
Acute meningitis	4	4	...	1	1	1	...	1	...	...	...	2	...	1	1	...	...	...	...	...
Chronic meningitis	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Pachymeningitis	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Tubercular meningitis	8	4	4	1	2	2	1	1	1	...	...	2	4	2	...	...	...	...	...	...
Hemiplegia	14	8	6	...	...	2	3	4	4	1	...	1	...	7	2	4	...	...	...	...
Aphasia	2	2	...	...	...	...	...	1	...	...	1	...	...	2	...	...	...	...	...	...
Cerebral hæmorrhage	7	5	2	...	...	...	...	...	2	2	3	6	...	1	...	...	...	...	...	...
Cerebral tumour	10	6	4	...	2	2	2	3	1	...	...	2	1	1	3	1	1	1	...	...
Chronic hydrocephalus	8	6	2	5	3	...	...	...	...	...	...	1	2	2	2	...	1	...	...	...
Thrombosis of basilar artery	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...
Headache	3	1	2	...	...	...	2	...	1	...	...	1	...	2	...	...	...	...	...	...
Optic neuritis	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Vertigo	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Coma	1	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
General tremor	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Obscure cerebral disease	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Tetany	6	6	...	2	...	1	2	1	...	...	...	3	...	2	1	...	...	...	...	...
General paralysis	2	2	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Idiocy	4	4	...	...	...	...	...	3	...	1	...	2	1	1	...	...	...	...	...	...
Other mental disorders	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Chorea	8	4	4	...	1	2	3	2	...	...	...	4	3	...	1	...	...	...	...	...
	18	3	15	2	5	8	3	...	...	...	...	1	3	3	11	...	...	...	...	...

continued.

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M	F.	M.	F.	M.	F.	M.	F.	
...	...	11	2	1	...	6	7	2 readmissions. Of the fatal cases: 9 contracted granular, 2 large white, 1 syphilitic, and no P.M. in 1; pericarditis in 2, adherent pericardium in 1, aphasia in 1.
1	1	...	1	...	...	...	...	1 readmission.
...	...	...	...	...	...	1	...	Sarcoma.
...	...	...	1	...	...	...	1	Phthisis pulmonalis in both. In fatal case tubercle also of ureter, bladder, spleen, and intestines.
1	...	...	...	...	...	...	...	
...	...	1	...	...	2	...	...	
1	...	1	...	...	...	...	...	
...	...	1	...	...	...	...	...	
...	...	3	...	...	...	...	...	1 probably tubercular.
...	...	2	...	...	...	...	...	
...	...	...	...	...	1	...	...	Transferred to surgeon.
...	...	...	1	1	...	...	...	
...	...	...	1	...	...	...	...	
1	...	...	...	...	...	3	...	Of the fatal cases: 1 secondary to ear disease, 1 to caries of bones at base of skull, in 1 also spinal meningitis.
...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	
...	...	...	...	...	4	4	...	No P.M. in 1.
...	...	7	6	1	...	...	...	3 on the right side, 2 of whom were aphasic, cardiac disease in all; 11 on the left side, cardiac disease in 3, syphilitic history in 2, 1 a case of second attack, insanity in 1.
...	...	2	...	...	...	...	...	
...	...	1	...	...	4	2	...	In 4 hæmorrhage into ventricles, 1 into pons, 1 subarachnoid.
...	...	5	3	...	1	1	...	Fatal cases: 1 cyst of cerebellum, 1 glioma right occipital lobe, see Special Abstract, p. 351.
...	...	3	1	...	...	3	1	Aspiration performed in 1 fatal case.
...	...	...	...	...	...	1	...	
1	2	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
...	1	5	...	...	...	...	...	
...	1	...	1	...	...	...	...	
...	...	4	...	...	...	...	...	
...	...	1	...	...	...	...	...	
1	1	1	3	2	...	...	...	1 melancholia; 1 post-epileptic mania.
2	13	1	2	...	...	...	...	1 readmission. 11 first attack, 6 second, 1 third. 1 the result of pregnancy.

continued.

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	27	...	14	...	2	...	...	Fits in 8; paraplegia in 5, all cured; left hemiplegia in 1; anæsthesia in 2; vomiting in 3 were the chief symptoms.
8	8	11	8	1	1	1	3	Of the fatal cases: 3 infants, 1 adult; no P.M. in 2; rickets in 1; laceration of brain, due to old fracture of base, in adult case.
4	2	13	3	...	1	...	...	Caries of vertebræ in 5, two of which made a complete recovery; syphilitic history in 3; optic neuritis in 1; 1 probably malignant disease of vertebræ; 1 probably malingering.
...	...	...	1	...	...	...	...	
...	...	10	...	...	...	...	...	2 readmissions. 4 cases treated by suspension; no benefit in 1, temporary improvement in 3.
...	...	2	2	...	...	...	...	
...	...	1	2	...	...	...	...	In 1 the arm, in 2 the leg affected.
...	...	1	1	...	...	...	...	1 after measles.
...	...	2	2	1	...	...	...	Chronic morphinism in 1.
2	1	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	Optic neuritis.
...	1	...	...	...	...	...	...	
1	1	...	5	...	...	1	...	No P.M. in fatal case; phthisis also.
1	...	1	3	...	...	2	1	2 delirium tremens, 3 gastric, 1 coma. Of the fatal cases: fatty liver in 1, early interstitial nephritis in 1, P.M. negative in 1.
11	1	2	...	...	...	...	...	Colic in 12, palsy in 2. 5 were painters, 2 colour mixers, 1 relief stamper, 2 barmen, 1 cooper, 1 engineer.
1	5	1	1	...	...	1	...	2 chronic cases.
2	1	...	...	...	...	...	...	
...	...	...	...	...	...	1	...	
1	2	...	...	...	...	1	...	Fatal case: boy 2 years old died one hour and fifty minutes after poison, quantity unknown.
...	1	...	...	...	...	...	...	Only small quantity taken; alcoholic case.
...	...	...	1	...	...	...	...	Cocain habit, also morphinism.
1	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
5	1	...	...	...	1	...	...	The case unrelieved was transferred to surgeon for gastrotomy, and proved fatal soon after the operation. The œsophagus was found to be entirely denuded of mucous membrane, and the cardiac and pyloric ends of stomach were narrowed. A complete cast of œsophagus was vomited during life.
...	3	...	...	...	...	1	...	No P.M. in fatal case.
...	1	...	...	...	...	...	...	
...	...	...	...	...	...	1	...	Probably liquor potassæ. P.M.—Erosion of œsophagus, and intense congestion of stomach and intestines.

continued.

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	1	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
...	3	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	
2	1	...	1	...	...	...	...	
...	...	...	3	...	...	6	...	All infants, 10 months and under. No P.M. in 2. In all extreme wasting.
...	...	...	1	...	1	...	...	
7	1	...	...	...	1	...	...	
1	2	4	3	1	...	1	1	1 readmission. Optic neuritis in 2. Of the fatal cases: suppuration of lateral sinus in 1, cerebellar abscess in 1. There was suppuration of lateral sinus in a male, who recovered after trephining and ligaturing of sinus and internal jugular vein.
3	3	...	...	...	...	...	...	
1	2	...	...	...	...	...	...	
2	6	2	3	3	...	...	...	1 readmitted.
5	1	...	2	...	2	...	...	
...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	
...	...	...	...	...	...	1	...	See Special Abstracts, p. 352.
...	...	...	2	...	1	3	...	1 case admitted three times. Of the fatal cases: 2 malignant, 1 simple, see Special Abstracts, p. 353; peritonitis in all.
421	428	286	274	26	24	193	169	
849	560	50	362					
1821								

TABLE IV.—*Table of Mortality.*

DISEASE.	Total.		Age.								Mortality per cent.
	No. dis- charged.	No. died.	Under 5	5-10	20	30	40	50	60	70	Above 70
1. GENERAL DISEASES.											
Measles	7	1	1	...	...	...	...	...	...	...	12·5
Scarlet fever	27	4	4	...	...	...	...	...	...	...	12·9
Enteric fever	39	7	...	1	2	3	1	...	...	...	15·2
Erysipelas	14	2	1	...	...	1	...	...	...	...	12·5
Diphtheria	91	85	63	20	2	...	...	...	...	...	48·3
Pyæmia	1	3	...	...	1	1	...	1	...	...	75
Pertussis	6	1	1	...	...	...	...	...	...	...	14·3
Hydrophobia	...	1	...	...	1	...	...	...	...	...	...
Rickets	6	7	7	...	...	...	...	...	...	...	53·8
Acute rheumatism	77	1	...	...	...	1	...	...	...	...	1·2
Diabetes mellitus	10	6	1	...	2	...	1	...	...	2	37·5
Purpura	5	1	...	...	1	...	...	...	...	...	16·5
Anæmia	31	1	...	...	...	...	1	...	...	...	3·1
Pernicious anæmia	1	1	...	...	...	...	...	...	...	1	...
Lymphadenoma	...	2	...	...	...	2	...	...	...	...	...
General tuberculosis	2	6	4	...	...	1	...	1	...	...	75
Malignant disease	...	3	...	...	1	...	1	...	1	...	...
2. DISEASES OF THE RESPIRATORY ORGANS.											
Acute laryngitis	6	3	2	1	...	...	...	...	...	...	33·3
Malignant disease of larynx	3	1	...	...	...	...	...	...	1	...	...
Bronchitis	47	5	1	...	...	...	1	3	...	...	9·6
Broncho-pneumonia	8	7	6	1	...	...	...	...	...	...	46·6
Acute pneumonia	74	7	1	...	...	2	1	2	1	...	8·6
Emphysema	2	1	...	...	...	...	...	1	...	...	...
Phthisis	38	25	1	1	2	8	5	7	1	...	39·6
Pleurisy	37	1	...	...	...	...	...	1	...	...	2·6
Empyema	15	3	1	...	...	...	1	...	...	1	16·5
Intrathoracic tumour	1	3	...	...	...	...	1	1	1	...	75
Œdema of lungs	...	1	...	...	...	...	...	...	...	1	...
Gangrene of lung	...	2	...	...	...	1	1	...	...	...	...
3. DISEASES OF THE ORGANS OF CIRCULATION.											
Pericarditis	3	2	...	1	...	...	1	...	...	...	...
Mitral	52	14	...	1	5	4	2	2	...	...	21·2
Aortic	5	4	...	...	...	...	...	2	2	...	44·4
Mitral and aortic	10	11	...	...	3	4	2	1	...	1	52·3
Thoracic aneurysm	11	2	...	...	...	...	1	...	...	1	15·4

TABLE IV—continued.

DISEASE.	Total.		Age.								Mor- tality per cent.
	No. dis- charged.	No. died.	Under 5	5-10	20	30	40	50	60	70	Above 70
3. DISEASES OF THE ORGANS OF CIRCULATION—continued.											
Ulcerative endocarditis . . .	...	10	1	1	2	1	4	1	...	...	...
4. DISEASES OF DUCTLESS GLANDS.											
Exophthalmic goitre . . .	4	1	...	...	1	...	...	...	...	...	20
5. DISEASES OF THE DIGESTIVE ORGANS.											
Stricture of œsophagus . . .	6	3	...	...	...	...	...	1	...	2	33·3
Gastric ulcer . . .	18	2	...	...	1	...	...	...	1	...	10
Malignant disease of stomach . . .	3	7	...	...	...	...	1	1	1	4	70
Gastro-intestinal catarrh . . .	...	5	5	...	...	...	...	...	...	...	...
Diarrhœa . . .	27	1	1	...	...	...	...	...	...	...	3·5
Intussusception . . .	3	1	1	...	...	...	...	...	...	...	25
Intestinal obstruction . . .	2	3	...	...	1	...	...	1	1	...	60
Malignant disease of intestines . . .	3	5	...	1	...	1	...	3	...	...	62·5
Perforation of vermiform ap- pendix . . .	...	3	...	2	1	...	...	...	...	...	...
Chronic peritonitis . . .	...	1	1	...	...	...	...	1	...	...	...
Malignant disease of peritoneum . . .	...	2	...	...	...	...	1	1	...	...	...
Cirrhosis of liver . . .	8	5	...	...	...	1	3	1	...	...	38·4
Abscess of liver . . .	1	1	...	...	...	1	...	...	...	...	...
Obstructive jaundice . . .	9	2	1	...	...	...	...	...	1	...	18·2
Abdominal tumour . . .	16	1	...	...	...	1	...	...	...	...	...
Malignant disease of liver . . .	1	4	...	...	...	1	2	...	1	...	80
Pylephlebitis . . .	...	3	...	...	3	...	...	...	...	...	...
6. DISEASES OF THE GENITO-URINARY SYSTEM.											
Acute nephritis . . .	20	2	1	...	1	...	...	...	...	...	9·1
Chronic nephritis . . .	14	13	...	...	2	3	1	5	2	...	...
Tubercular nephritis . . .	1	1	...	...	1	...	...	...	...	...	...
7. DISEASES OF THE NERVOUS SYSTEM.											
Acute meningitis . . .	1	3	1	1	1	...	...	...	...	...	75
Tubercular meningitis . . .	...	8	1	2	2	1	1	1	...	...	...
Chronic meningitis . . .	...	1	...	...	...	...	...	1	...	...	...
Cerebral hæmorrhage . . .	1	6	...	...	...	...	1	2	3	...	...
„ tumour . . .	8	2	...	...	1	1	...	...	...	...	20
Chronic hydrocephalus . . .	4	4	4	...	...	...	...	...	...	...	50

TABLE IV—*continued.*

DISEASE.	Total.		Age.									Mor- tality per cent.
	No. dis- charged.	No. died.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	Above 70	
7. DISEASES OF THE NERVOUS SYSTEM—continued.												
Infantile convulsions and epi- lepsy	37	4	3	...	...	...	1	...	...	...	...	9.7
8. POISONING.												
Alcoholism	12	4	...	...	...	...	2	1	...	1	...	25
Opium	8	1	...	...	...	...	1	...	...	...	...	11
Carbolic acid	3	1	1	...	...	...	...	...	...	...	...	25
Ammonia	3	1	...	...	...	...	...	...	1	...	...	25
9. SURGICAL AND MISCELLANEOUS.												
Marasmus	3	6	6	...	...	...	...	...	...	...	...	66.6
Disease of ear	11	2	...	...	1	1	...	...	...	...	...	15.3
10. DISEASES OF THE FEMALE GENERATIVE ORGANS.												
Pelvic hæmatocele	...	1	...	...	...	...	1	...	...	...	...	...
Ovarian tumour	1	3	...	...	...	...	1	2	...	...	...	...

TABLE V.—Cases of Infectious Diseases originating in Hospital.

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of attack.	Result.	Remarks.
F. B.	F.	20	Disease of breast	Measles	Jan. 11, 1889	C. Jan. 19, 1889	From Alexandra Ward.
E. G.	F.	20	—	"	April 12, 1889	C. April 24, 1889	From Adelaide Ward.
E. B.	F.	3½	—	"	July 31, 1889	C. Aug. 16, 1889	From Christian Ward.
U. K.	F.	6	—	"	Oct. 28, 1889	C. Nov. 6, 1889	Ditto.
F. C. A.	M.	23	—	Rötheln	Dec. 8, 1889	C. Dec. 16, 1889	House Physician.
J. C. S.	M.	3½	Pneumonia	Varicella	Feb. 20, 1889	C. Mar. 12, 1889	From Dorcas Ward.
F. D.	F.	4	Diphtheria	"	Mar. 10, 1889	C. " 27, 1889	From Luke Ward.
H. H.	F.	—	—	Enteric fever	" 1, 1889	C. May 11, 1889	Probationer.
H. L.	M.	23	—	Scarlatina	Sept. 27, 1888	C. Jan. 3, 1889	Medical student.
E. W.	F.	5	—	"	Jan. 2, 1889	C. Feb. 11, 1889	From Alexandra Ward.
G. P.	M.	3	Scald	"	" 7, 1889	C. " 10, 1889	Ditto.
A. D.	M.	1½	Perineal abscess	"	" 8, 1889	C. " 10, 1889	Ditto.
C. R.	M.	5	Scald	"	" 17, 1889	C. " 24, 1889	From Victoria Ward.
C. W. H.	M.	2	Burn	"	Mar. 2, 1889	D. Mar. 3, 1889	Ditto.
E. B.	F.	4	Excision of knee	"	" 2, 1889	C. June 17, 1889	Ditto.
F. M.	M.	2	Fractured femur	"	" 8, 1889	C. April 21, 1889	Ditto.
A. B.	M.	2½	Burn	"	" 20, 1889	C. " 21, 1889	From Alexandra Ward.
A. S.	F.	12	Necrosis of tibia	"	" 28, 1889	C. May 20, 1889	From Elizabeth Ward.
E. P.	F.	18	Cleft palate	"	April 12, 1889	C. " 20, 1889	From Christian Ward.
L. C.	F.	14	Rheumatism	"	" 26, 1889	C. June 9, 1889	From William Ward.
J. G.	M.	21	Lymphangitis	"	May 6, 1889	C. " 9, 1889	From Luke Ward.
F. S.	M.	2	Diphtheria	"	" 12, 1889	D. May 13, 1889	From Edward Ward.
T. H.	M.	12	—	"	July 23, 1889	C. Sept. 8, 1889	From Christian Ward.
T. C.	M.	3	—	"	" 24, 1889	C. Aug. 28, 1889	From Edward Ward.
W. S.	M.	17	Spinal disease	"	" 27, 1889	C. " 29, 1889	From Albert Ward.
W. E.	M.	7	Excision of knee	"	" 29, 1889	C. Sept. 14, 1889	From Albert Ward.

TABLE V—*continued.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of attack.	Result.	Remarks.
M. E. R.	F.	3	Diphtheria	Scarlatina	Aug. 15, 1889	C. Sept. 4, 1889	From Luke Ward.
L. M. S.	F.	2	"	"	" 16, 1889	C. " 29, 1889	Ditto.
L. W. M.	F.	23	"	"	" 19, 1889	C. " Oct. 5, 1889	Nurse.
A. B.	F.	27	"	"	" 25, 1889	C. " 6, 1889	Ditto.
A. R.	F.	6	Diphtheria	"	" 28, 1889	C. Sept. 22, 1889	From Luke Ward.
T. H.	M.	2½	"	"	" 31, 1889	D. Sept. 18, 1889	From Arthur Ward.
T. E.	M.	2¾	"	"	Sept. 6, 1889	D. " 18, 1889	Ditto.
A. L.	F.	7	"	"	" 29, 1889	C. Nov. 3, 1889	From Christian Ward.
H. P.	M.	2½	Burn	"	Nov. 4, 1889	C. Dec. 23, 1889	From Victoria Ward.
L. W.	F.	4	Diphtheria	"	" 6, 1889	C. " 15, 1889	From Luke Ward.
C. C.	M.	1	"	"	" 7, 1889	D. Nov. 8, 1889	Ditto.
N. M.	F.	3½	"	"	" 9, 1889	D. " 10, 1889	Ditto.
F. L.	M.	4	"	"	" 4, 1889	D. " 17, 1889	Ditto.
M. L.	F.	1	Burn	"	" 23, 1889	C. Dec. 27, 1889	From Victoria Ward.
C. M.	M.	2½	Diphtheria	"	Dec. 13, 1889	D. " 28, 1889	From Luke Ward.
C. B.	M.	27	"	Diphtheria	Aug. 22, 1889	D. Aug. 26, 1889	House Surgeon.

SPECIAL ANALYSES AND ABSTRACTS.

I. GENERAL DISEASES.

(i.)—HYDROPHOBIA.

F. M. S—, girl, æt. 13½, was bitten on lower lip by a small terrier dog on August 6th, 1889. The dog was taken to the Home at Battersea in a comatose condition, vomited gravel, and was destroyed. No P.M. was made. The wound on lip was cauterised soon after its infliction. The child, naturally emotional, became gloomy, and moped for two or three days before she was taken ill. On September 17th she was at school, but was reprovved and shaken on account of inattention. The same afternoon she became unable to drink, catching her breath when she attempted to do so.

On September 18th she was admitted. Face flushed; expression wild and suspicious; very emotional. When water was offered to her she pushed it away at first, but when at last she was persuaded to drink she slowly took some water into her mouth and swallowed it with apparently some slight difficulty at the moment of deglutition. Occasionally there was a kind of sobbing catch in her breath.

The faradic current was applied to hands and arms on the supposition that she was hysterical, but without benefit.

Later when milk was offered to her she held it out at arm's length, and then with a great effort of will put it to her mouth and took a small quantity, which was at times swallowed, at times ejected with violence, always with a catching of breath.

Pulse 96; temp. 100°.

Progress.—The choking and catching in the breath continued. The sight and even the sound of liquids caused shuddering and spasm. Much frontal headache. Restless, sleepless, talkative. Talked much of the injustice done her by the teacher on the previous day. During the spasms she started up in bed, face became flushed, eyes staring; at first tonic contraction of muscles of chest and larynx, later clonic. At the end of one attack implored that something should be done as she feared choking in the next one. Occasionally wandering, generally very obstinate; great thirst; knee-jerks present.

Treatment and termination.—Morphia injections were given at first, but discontinued because the punctures excited her so much. Chloral per rectum was tried but was not retained. Chloroform was commenced to be administered when a sudden spasm came on, followed by gasping inspirations and cardiac failure. She died 9.45 a.m., September 20th.

Post mortem.—Negative.

(ii.)—PYÆMIA.

Fatal case.

1. W. B—, æt. 14, a stable boy, admitted March 18th, 1889; died March 21st.

He lived over stables belonging to his grandfather, and worked in the stables rubbing down the horses, of which there were seven, and occasionally carrying water, straw, &c., into adjoining stables. The boy had a crack on his finger which developed into an ulcer some three weeks before the fatal illness. At first he took no notice of it, but afterwards poulticed it at night and kept a rag round it during the day.

On March 13th, while in the stables rubbing down a pony, he suddenly leaned up against the wall exclaiming "Oh, my hip!" the onset of pain being apparently so sudden that his father thought the pony had kicked him. He had had vague pains in the right hip for two or three days previously. He was helped upstairs and did not leave his bed again until he was brought to the hospital.

No rigors; vomiting March 17th; delirium same night.

On admission, still severe pain right hip, increased on movement; right thigh semiflexed, rotated inwards; great tenderness; temp. 105.4°, pulse 132, respiration 24; delirium. No abnormal signs thoracic or abdominal viscera.

On 20th, hip-joint was explored by means of incision along great trochanter, the cartilage apparently healthy. A teaspoonful of purulent-looking fluid evacuated. On 21st patient died.

Post-mortem—Ulcer tip of right forefinger; subcutaneous abscess between knuckles of first and middle finger of left hand. With exception of redness of cartilage of hip-joint no abnormality; pyæmic infarct lower lobe of left lung; several minute abscesses in kidneys.

Note.—No history of glanders in the stables was obtained. A similar case, which was shown to be glanders by the development of the characteristic eruption, died in the hospital on the Surgical side in 1885, and was reported in the 'Lancet,' vol. ii, 1885, p. 200. In this case there had been very severe pain in the right hip for three weeks, with high temperature and delirium. The eruption developed on the day before death. At the post-mortem opaque synovial fluid right hip-joint. Caseous nodules solid and greenish-white over the surfaces of both lungs.

II. DISEASES OF RESPIRATORY SYSTEM.

(i.)—NECROSIS OF CRICOID CARTILAGE. COLLAPSE AND BRONCHO-PNEUMONIA LEFT LUNG. PROBABLY ENTERIC FEVER, BUT NO EVIDENCE OF IT AT POST-MORTEM.

Jane R—, æt. 5, was admitted May 6th, and died June 5th, 1889.

Her brother had been admitted to the hospital with enteric fever five weeks previously.

She was taken ill on May 3rd with thirst, anorexia, retching, drowsiness, and abdominal pain. On May 5th there was frequent vomiting, and delirium came on in the evening.

On admission.—Well-nourished, flushed, delirious; sordes on lips and teeth. Abdomen distended and tender; constipation. Spleen felt one inch below ribs; tongue furred. Temp. 104° , pulse 128, respiration 36. Urine, trace of albumen. No rash.

Progress.—The temperature maintained the same character for about fifteen days, varying between 102.4° and 104.2° , generally reaching the higher point in the evening. On May 22nd the morning remissions commenced to become greater, and the evening temperature also became less, until on the 27th a nearly normal temperature was maintained. What seemed like a recrudescence occurred on the 29th, and the temperature was febrile in the evening until the 2nd of June, after which date it was normal or subnormal.

At first there was constipation, but from the 11th to the 26th there was diarrhœa, with occasional pea-soup motions.

On the 10th it was noted that the spleen could be felt two inches below the ribs.

While the fever lasted she continued delirious and semi-unconscious, and frequently passed her evacuations into the bed. On May 20th there was retraction of the head, and the optic discs were hazy and somewhat swollen.

She improved very much at the time the fever abated; she became sensible, talked a little, and appetite returned.

On May 31st she appeared to have laryngitis with inspiratory dyspnœa. On June 3rd inspiration accompanied by loud crowing. Temperature subnormal. Pulse irregularly intermittent. She died on the 6th.

Post-mortem.—No evidence in intestines or mesenteric glands of past or present enteric fever. The last two or three feet of the ileum were singularly contracted. Spleen normal in size and appearance.

Larynx so full of muco-pus that nothing could be seen on looking down through glottis. A clearly punched-out round hole was seen at the posterior insertion of the left vocal cord, and passed downwards into a large cavity containing pus, in which the cricoid cartilage opaque yellow in colour lay free. There was no evidence of tubercle.

There was also collapse, acute bronchitis, and broncho-pneumonia of the upper lobe of the left lung.

Note.—The clinical history was in many respects that of typhoid fever, as shown by the course of the fever, the enlargement of the spleen, the diarrhœa. There was also the fact of the brother having a typical attack of enteric. The condition of the larynx corresponded exactly with that found from time to time in enteric fever. Death took place at least five weeks after the onset of the illness, and no trace of intestinal affection was then found.

(ii.)—ACUTE PNEUMONIA.

Three cases in one family.

M. F—, girl, æt. 3½, admitted April 30th, 1889.

Illness commenced with a fit on April 27th. When admitted there were the signs of pneumonia at right base. The temperature became normal on May 2nd, the sixth day of the illness.

W. F—, boy, æt. 5, admitted May 1st.

He was quite well until the morning he was brought to the hospital. He had occupied the same bed as his sister, M. F—, until she was taken ill on April 27th. The typical signs of pneumonia developed at the left axilla. The temperature became normal on May 5th, the fifth day of the illness.

B. F—, girl, æt. 2½, admitted May 4th.

Taken ill on May 3rd. Typical pneumonia right lung. Temperature became normal on May 7th, the fifth day of the illness.

All three made good recoveries.

(iii.)—GANGRENE OF RIGHT LUNG DUE TO LODGMENT OF COLLAR-STUD IN RIGHT BRONCHUS.

F. W—, æt. 23, admitted July 8th, 1889; died July 21st, 1889.

The patient suddenly was taken ill with pain in the right side, cough, and sweating, some seven weeks prior to admission. At the end of two weeks he had so far recovered that he was able to go about his work. A week afterwards he fell ill again with shivering, cough, and sweating, but had no pain. Since then he continued ill, sweating at night and occasionally vomiting. No history which could account for the presence of collar-stud in bronchus.

Condition on admission.—Emaciated and very ill; expectoration copious, muco-purulent, and fœtid. Respirations 36 to the minute. Movements of thoracic wall not good. Pulse 100, temp. 102·4°.

Right lung resonant in front only down to fourth rib, crackling sounds in axillary line, dull behind nearly up to the angle of scapula, with diminution of voice-sounds over the same area; crepitations and ægophony at the level of the scapula; tubular breathing in right axilla.

Left lung in front, resonance impaired, pectoriloquy and tubular breathing below the outer part of clavicle; behind, some impairment of resonance over the upper third, expiration prolonged.

Nothing abnormal in other organs.

Progress.—The expectoration continued very copious and extremely fœtid.

The temperature throughout was hectic. The physical signs remained unaltered. The patient steadily got worse.

Post-mortem examination.—Extreme emaciation. Right pleura firmly adherent over lower half. Right lung and whole of two lower lobes dark red up to black, quite soft, fetid, containing numerous ragged cavities, while the upper lobe was firmer, greyer, and plainly had been inflamed. Left lung general bronchopneumonia, the upper lobe being nearly entirely consolidated. The mucous membrane of the trachea and the left bronchus was normal. In the right bronchus, at the level of the branch to the upper lobe, was found a bone collar-stud, and the mucous membrane surrounding it was eroded and almost black.

III. DISEASES OF DIGESTIVE SYSTEM.

- (i.)—MALIGNANT DISEASE OF STOMACH; PROGRESSIVE WEAKNESS AND LOSS OF FLESH; NO VOMITING, NO GASTRIC PAIN, NO HÆMATEMESIS; THROMBOSIS OF ILIAC AND FEMORAL VEINS; DEATH; AUTOPSY.

Male, æt. 48, admitted December 5th, 1888; died January 31st, 1889.

Progressive weakness and emaciation for three months before admission. Never vomiting or hæmatemesis; anorexia and night sweats.

On admission.—Anæmic and extremely emaciated; abdomen retracted and wall flaccid, but nothing abnormal felt; slight tenderness in region of right kidney.

On December 29th a hard mass, about an inch long, was felt just below the ribs on the left side.

On January 9th the left leg and thigh became much swollen and tense, and on January 16th the right leg became similarly swollen. The abdominal tumour became larger and more palpable before death.

Post-mortem examination.—Greater curvature of stomach, the posterior surface, and to a less extent the anterior surface of the pyloric half, were infiltrated with new growth. The neighbouring glands were also infiltrated. On the internal surface of the stomach the growth was very irregular, and in places ulcerating. Only a thin rim of growth at the junction of stomach and duodenum. Nodules in the liver. Thrombosis of common iliacs, both external and internal iliacs, and both femorals. A mass of growth was situated over the inferior cava two or three inches higher up.

- (ii.)—INTESTINAL OBSTRUCTION; STRANGULATION OF CÆCUM AND PART OF ILEUM.

Male, æt. 29, was taken ill January 11th, 1889; admitted January 14th; died January 16th.

History.—Three attacks of colic, the first seven years, the last two years previously. Indigestion for three or four years; discomfort and pyrosis, but no pain after food. Bowels always quite regular. On January 11th, one hour after

evacuation of the bowels, pain came on and soon after sickness. The vomiting continued, and the pain increased in severity. No action of bowels in spite of enema on night of 13th, and purgatives on 12th and 13th.

Condition on admission.—Not collapsed, healthy-looking. Abdomen: tenderness and rigidity of muscles on left half; no peristalsis seen, but to be heard everywhere; paroxysms of pain. Under anæsthetic, a body about six inches long could be felt on left side of abdomen. Pulse 84, hard and wiry.

Progress.—No action of bowels took place. Pain relieved by morphia. Gradually sank and died January 16th.

Post-mortem.—Abdomen only examined, and that only partially. Lower three inches of ileum, together with cæcum, and about 12 inches of ascending colon black and gangrenous, lying in left hypogastrium. No sharp line of demarcation of gangrenous from healthy bowel.

(iii.)—PERITYPHLITIC ABSCESS; INCISION AND DRAINAGE;
ACUTE PERITONITIS; DEATH; AUTOPSY; MALIGNANT
DISEASE OF ASCENDING COLON.

Female, æt. 54, admitted December 12th, 1888; died January 13th, 1889.

History.—For seven months pain in right loin; loss of flesh for six months; no vomiting or diarrhœa.

Condition on admission.—Pale and emaciated; a tender, hard, fixed, smooth mass in right iliac region, extending from iliac crest to the level of umbilicus and inwards to an inch from the mid-line. No abnormal abdominal distension.

Progress.—The temperature was hectic for first five days. On December 17th a rigor occurred, temperature rising to 105°. On December 21st an incision was made over the tumour and a large abscess behind the peritoneum containing non-offensive pus was evacuated, and its cavity was washed out. A grape-stone was found in the pus. Acute peritonitis developed on January 12th, and patient died next day. Bowels constipated throughout.

Post-mortem.—Five inches behind the ileo-cæcal valve a ring of malignant growth extended round the colon for some 1½ inches without constricting it. The floor was ragged, soft, and greyish, and communicated with the abscess-cavity at two places. The connective tissue posteriorly was infiltrated with growth.

(iv.)—PYLEPHLEBITIS.

Selected fatal cases.

a. Male, æt. 22, admitted March 9th, 1889; died April 3rd, 1889.

He had been ill about eight weeks, suffering from abdominal pain in the region of the liver. He had sickness the first day he was taken ill. During the last two or three weeks he had had occasional rigors.

About a year previously he had had an attack of severe abdominal pain coming on without apparent cause. Two or three times since he had had similar attacks.

Condition on admission.—Thin, pallid; slight icterus; epigastrium prominent and dull on percussion. Liver uniformly enlarged and tender to palpation.

Spleen moderately enlarged. Superficial abdominal veins dilated. Blood: slight excess of leucocytes.

Progress.—A good deal of pain in right hypochondrium was experienced. The icterus remained slight throughout. No bile was found in the urine, and there was no absence of bile from the motions. The temperature was throughout pyæmic in character. On March 12th he had two rigors with temperatures of 104.6° and 105.2° ; and on March 21st and 22nd he had also rigors. On March 24th an exploring needle was put into the liver, but only a little blood was drawn off. Ascites developed and paracentesis was performed on March 27th, but only four ounces of slightly turbid pink serum were drawn off. Œdema of feet, legs, and back also came on. There was a slight rigor on the 31st. On the 2nd of April constant sickness came on, and he died next morning. Mind clear throughout.

Post-mortem examination.—Body emaciated; lower limbs œdematous; no perceptible jaundice; about five pints of turbid lymph in abdominal cavity, shreds of lymph adherent to intestines. Liver very large, over 7lbs.; two large irregular abscesses in right lobe, containing a pint and a half and a pint of pus respectively; two or three smaller abscesses in left lobe. The portal vein was thrombosed, containing soft purulent matter and adherent clot; both main branches affected. Spleen moderately enlarged and soft, 13 oz. Intestines: some injection of the mucous membrane about ileo-cæcal valve. Lungs: suppurating infarct lower lobe of left lung.

b. E. S—, æt. 23, painter, was admitted December 4th, 1889, and died on December 10th.

The only illnesses previously experienced had been two slight attacks of colic fifteen and twelve months before.

On November 11th he was attacked by severe and continuous pain in the stomach and frequent vomiting. He remained ill a week, being slightly feverish, and on the 15th delirious. The pain and sickness then ceased but great prostration remained.

On November 23rd the pain and vomiting returned with increased intensity and were accompanied by diarrhœa. On December 2nd, 3rd and 4th he vomited a small quantity of bright red blood. There was no feverishness or delirium during the attack. The pain was of a dull aching character, constant, but liable to exacerbations; increased by food, but not always so.

On admission.—Well nourished, cheeks flushed, drowsy and heavy expression. Abdominal muscles rigid; no distension; pain on pressure not more severe in one place than another. Liver and spleen: no apparent enlargement. No abnormal signs in thorax; skin hot and dry; tongue dry and cracked. Pulse 140, resp. 28, temp. 104.8° .

Progress.—During the six days which preceded his death he had several rigors, the temperature rising to 104.8° and 105.6° on two occasions, and throughout being very irregular. The abdomen soon became distended and tender all over, and he lay on the back with the legs drawn up. Delirium came on on the 6th and coma on the 9th. The bowels were open on the 6th, after enema. The pulse throughout was over 120.

Post-mortem.—Intestines distended and slightly adherent. Much pus in dependent parts of abdominal cavity. No cause could be discovered for the

peritonitis. Intestine healthy from end to end. Recent inflammation and thickening of the connective tissue in the portal fissure, and the vena porta was distended with thick somewhat discoloured pus, and suppuration was traced all down the inferior mesenteric vein to the wall of the rectum. Both right and left lobes of the liver were occupied by extensive areas of suppuration, which on section showed as islets of pus arranged in a large circle. Spleen large, $8\frac{1}{2}$ oz. in weight, and very soft. No signs of disease in other organs.

IV. DISEASES OF THE NERVOUS SYSTEM.

(i.)—ACUTE MENINGITIS SECONDARY TO CARIES OF SPHENOID BONE; SEPTIC INFARCTION OF LUNGS.

Male, æt. 17, admitted March 30th, 1889; died April 3rd, 1889.

Until March 23rd he had been quite well, except that he had been subject to epistaxis for about a year. He then complained of violent headache. The headache continued severe, and was general. On March 30th, the day of admission, he had epistaxis, the blood smelling very badly.

On admission.—Heavy looking boy. Headache "like knives," now in one part of head, now in another. No sign of paralysis in face or eyes; no optic neuritis. Knee-jerks present and equal. Grasp of right hand weaker than left. Pulse 128, full, bounding.

Progress.—He became violently delirious on the 31st, with intervals of stupor. Proptosis of the left eye with much œdema of the upper lid, and optic neuritis developed. The left pupil was generally smaller than the right. The end of nose became bulbous, red, and shiny. The temperature was high throughout, varying between 103° and 105° .

Post-mortem.—Basal meningitis. The lateral and cavernous sinuses on the right side were occupied by adherent clot. The dura mater over the right temporal bone was normal. No pus in petrous or mastoid bones. The body of the sphenoid was diseased. Beneath the periosteum was some thick pus, and the bone was bare, soft, and carious. The left orbit contained about two drachms of very fœtid pus, and its inner bony wall was extensively softened by disease. There were numerous septic infarcts in lungs.

(ii.)—CEREBRAL EMBOLISM (RIGHT MIDDLE CEREBRAL); LEFT HEMIPLEGIA AND HEMIANÆSTHESIA; OPTIC NEURITIS, RIGHT SIDED HEADACHE; PROGRESSIVE EMACIATION. DEATH AFTER THREE AND A HALF MONTHS. POST-MORTEM: ULCERATIVE ENDOCARDITIS.

Female, æt. 17, admitted January 29th, 1889; died May 13th, 1889.

No previous illness except measles. For some years subject to headache, and short of breath on exertion. Always excitable.

About the middle of January laid up for a week with swelling of legs. On January 27th sudden faintness with pallor occurred, and ten minutes later she fell on the floor and could not get up, but did not lose consciousness. Vomiting occurred soon after and continued all night.

On admission.—Pale and anæmic, dull and apathetic, suffering from severe pain on right side of head. Complete loss of power of left arm and leg. Slight paralysis of lower half of left side of face. Tongue protruded to left. Sensation impaired all over left side of body. At the apex of heart was a distinct sharp first sound, followed by a systolic murmur well conducted to the axilla and also to be heard at the left base, but less distinctly. Fundi no abnormal change.

February 2nd.—Weakness of left external rectus.

February 4th.—Severe neuritis of right and to a less degree of left optic nerve.

There was rapid emaciation. No improvement took place in the paralysed side of body. Throughout the illness there was a hectic temperature, the variations being usually between 102° and 99° , but occasionally greater. Bed-sores developed. For the last ten days before death the temperatures ranged higher than at any previous time.

Post-mortem.—The right cerebral hemisphere was very much softened. All the convolutions, except those of the occipital lobe and the lower two temporo-sphenoidal, were affected. The softening extended deeply, involving the central ganglia. The corpus striatum was very soft, yellow, and shrunken to very small proportions. The posterior part of the optic thalamus was unaffected. The right middle cerebral was almost completely obliterated at its origin, and its walls were very thick. The right anterior cerebral was also involved, but the parts supplied by it were not so diffuent as those supplied by the middle cerebral. The other cerebral vessels were healthy. The mitral valve was quite incompetent, ulcerated, and thickened, and the chordæ tendineæ were ruptured. There were infarcts, both old and recent, in the spleen and kidneys.

(iii.)—GLIOMA OF RIGHT OCCIPITAL LOBE, WITH HÆMORRHAGE. GRAVES' DISEASE.

Female, æt. 30, admitted March 27th, 1889; died March 29th, 1889.

History.—Palpitation of heart eighteen months, exophthalmos twelve months, swelling in region of thyroid three months. She had been noticed to be particularly irritable for fourteen days before admission.

Condition on admission.—Aspect of serious illness. Complaint of pain on left side of head. Pulse 105, temp. 99.4° . Heart-sounds loud and ringing, impulse heaving and diffused. Eyes remarkably prominent. Von Graefe's sign not present, no oculo-motor paralysis. Thyroid not perceptibly enlarged. No apparent paralysis. Knee-jerks exaggerated. Mental condition irritable and obstinate.

Progress.—Noisy and troublesome during night of 27th. March 28th.—Fingers of right hand in constant movement. Left hand and arm flaccid. Cardiac action 115 to 120. Head turned to right, and both eyes to the left. Independent movements of eyeballs. Occasional trembling of extremities. Cheyne-Stokes breathing. The temperature steadily rose till death to 109° .

Post-mortem.—Thyroid slightly enlarged, right lobe extended in between trachea and œsophagus, as far as middle line. Thymus persistent, three inches long on front of trachea. Heart: left ventricle somewhat hypertrophied. Brain: centre of right occipital lobe occupied by a long oval tumour greyish red and of soft consistence, with a recent jelly-like clot in its centre. The tumour lay on the outer side of the posterior tip of the optic thalamus, but did not involve it. On section, structure a glioma.

V. DISEASES OF FEMALE GENERATIVE ORGANS.

(i.)—PELVIC HÆMATOCELE; OBSTRUCTION OF RECTUM; PERFORATION OF ULCER IN CÆCUM; PERITONITIS.

Female, æt. 30, married, admitted January 7th, 1889; died January 27th, 1889.

During the seven months before admission there had been three attacks of metrorrhagia, lasting two months, and separated by intermissions of a fortnight. These were attended with pains in the loins. About fourteen days before admission she was attacked by severe pain in the lower abdomen, and suffered great agony.

On admission.—Thin and anæmic, eyes sunken. Complaining of intense abdominal pain. Pulse 120, small; temp. 100°. Abdomen distended, tender, and resonant. *Per vaginam* and *per rectum*, a large swelling in Douglas's pouch, solid-feeling but not hard. Uterus fixed, dragged up and forward against pubes. Retention of urine. Præ systolic murmur at apex of the heart leading up to loud first sound.

Progress.—At first there was relief from leeches and opium. The pain diminished, the abdomen became less distended, and a swelling could be felt above the pubes. Bowels relieved by enema. On January 17th the distension increased, vomiting came on, and uterine hæmorrhage occurred. On January 26th paracentesis of the abdomen was performed, and 27 oz. of thick yellow fluid were removed. The temperature was never high, varying between normal and 102°. During the first ten days the bowels were constipated and only acted after enemata; during the latter ten days the bowels acted three or four times a day, and the motions were loose but small in quantity.

Post-mortem.—Abdomen distended with gas. Much liquid yellow fæces in peritoneal cavity. Recent peritonitis. A large collection of thick liquid blood and clot between the uterus and rectum. The rectum was compressed and twisted by the tumour. In the cæcum there was an oval, well-defined ulcer an inch long, with two or three perforations. The left ovary was infiltrated with blood and a little enlarged. The right was about twice the normal size and converted into a serous cyst. Heart: considerable degree of mitral stenosis.

(ii.)—OVARIAN TUMOUR WITH CHRONIC PERITONITIS AND ASCITES.

E. S—, æt. 42, died June 11th, 1889.

This patient was first admitted on the Surgical side in October, 1884, with ascites, which had then been gradually increasing for six months. Twenty pints of fluid were drawn off from the abdomen on this occasion. She was again admitted in January, 1885, and over twenty pints of fluid were withdrawn. In June of the same year she was admitted a third time, and abdominal section was performed. Thirty-three pints of fluid were withdrawn. A cystic growth was found matted to the uterus, which was normal in size but fixed by adhesions to surrounding parts. There was thought to be some growth around the common iliac vessels on the right side as well as in the omentum. No attempt was made to remove the cyst, and the abdominal wound was closed.

In May, 1886, the patient was admitted on the Medical side for ascites, and was then, as subsequently, considered to be suffering from malignant disease of the peritoneum.

She was repeatedly readmitted to be tapped, the total number of admissions being over twenty.

She did not lose flesh, however, and, except for the inconvenience arising from the ascitic accumulations, she remained in fairly good health.

She was admitted for the last time on May 24th, 1889. It was then noted that she was thinner and looked more ill than she had done on previous occasions.

She was tapped on the 27th. She suffered from much abdominal pain and sickness. She had a fit on the 10th of June, and died on the 11th.

Post-mortem examination.—General emaciation. Evidences of chronic peritonitis, especially in the lower third of abdomen. The parietal peritoneum was rough, pitted, congested, and deeply pigmented. Liver adherent to diaphragm edge rounded, capsule thickened. The whole of the pelvis was occupied by a large, fairly even tumour, broader than it was long. Along its upper border from side to side, on a level with the iliac crests, ran the sigmoid flexure, while the bladder and uterus were attached to its anterior surface. The uterus was greatly atrophied. No sign of the ovaries could be detected on either side. The tumour consisted of numerous thin-walled cysts, some containing pus, some blood and pus, and all much viscid mucoid matter. The largest must have contained more than a pint of fluid. Irregular cauliflower growths projected into most of the cysts. The walls of the cyst were thin and simple in structure. Microscopic examination proved the growth to be a papilloma.

SURGICAL REPORT.

1889.

By E. SOLLY, M.B., F.R.C.S.

Preface.

THE report has been drawn up on the same general lines as in previous years, with the addition of a special table of the fractures and dislocations treated in the Casualty Department and not admitted to the wards.

With regard to the general practice of the hospital, a combination of iodoform gauze and salicylic wool, or sal alem-broth gauze (often used over a layer of boracic lint placed immediately on the wound), have been the forms of antiseptic dressings most usually employed. As antiseptic lotion a solution of perchloride of mercury (strength 1 in 2000 up to 1 in 1000) has largely replaced carbolic acid solutions, a solution of boric acid (2—3 per cent.) being employed as a non-irritating antiseptic for abdominal and other irrigation purposes.

Cotton-wool mops, wrung out in antiseptic solutions, and

often wrapped in a layer of antiseptic gauze, have almost entirely replaced sponges at operations (except in intra-abdominal sponging).

It will be observed that the number of cases of erysipelas arising in the surgical wards is below the average.

General Surgical Statement, not including the Ophthalmic Cases.

Number of surgical beds	241
„ of surgical patients in hospital, January 1st, 1889	192
„ „ „ „ December 31st, 1889	188
„ „ „ „ treated to a termination in 1889	2228

	Total.	Males.	Females.
Discharged cured	1570	1046	524
„ relieved	362	232	130
„ unrelieved	135	79	56
Died	161	97	64
Totals	2228	1454	774

Average number of deaths 7·2 per cent.
 „ „ days in hospital 31·6.

TABLE I.—*Abstract, showing Diseases in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
GENERAL DISEASES.																		
Erysipelas	37	15	10	6	4	7	13	5	3	4	23	12	6	...	...	...	...	11
Pyæmia	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
<i>Syphilis</i> —																		
Primary	1	5	...	...	4	2	...	...	...	...	...	...	1	5	...	...	...	...
Secondary	2	15	...	...	9	8	...	...	...	...	...	...	...	8	8	...	...	1
Tertiary	2	8	...	...	1	4	3	...	1	1	...	...	...	...	...	...	10	...
Congenital	1	3	4	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...
Tetanus	5	1	...	1	3	1	1	...	...	...	4	2	...	...	...	...	...	...
LOCAL DISEASES																		
<i>Carcinoma</i> —																		
Breast	...	11	...	...	...	...	1	3	3	4	...	...	...	...	3	1	7	...
„ and glands	...	26	...	...	...	...	5	5	9	6	...	...	...	1	7	9	8	...
Recurrent of breast	...	6	...	...	...	...	2	1	1	2	...	...	...	...	1	1	4	...
„ of glands	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	1	1	...
Malignant disease of cæcum	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Malignant disease of rectum	5	7	...	...	...	1	...	2	6	3	...	...	...	...	4	1	7	...
<i>Epithelioma</i> —																		
Face	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Do. (recurrent)	4	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	4	...
Cheek	3	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...	2	...
Lip	3	...	...	...	...	...	1	...	...	2	...	...	...	...	2	...	1	...
Do. (recurrent)	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	...
Tongue	18	5	...	...	...	2	...	5	8	8	...	1	2	6	7	2	5	...
Tonsil	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Palate	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Floor of mouth	5	...	...	...	...	...	...	1	1	3	...	...	...	2	2	...	1	...
Do. (recurrent)	5	...	...	...	...	...	...	1	4	...	...	...	...	...	1	2	1	1
Glands of neck (secondary)	6	1	...	...	...	1	1	1	2	2	...	...	1	2	1	1	2	...
Larynx	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Scalp	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...
Forearm	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Penis	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...

according to authorised Nomenclature.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
3	20	18	10	1	...	...	...	44	2	...	6	
...	...	1	...	...	...	...	...	...	...	...	1	
...	2	3	1	...	...	...	...	4	2	...	...	
2	3	4	6	2	...	...	...	11	5	1	...	2 refused treatment.
...	3	4	3	...	...	...	...	7	3	...	...	
...	1	3	...	...	...	...	...	2	...	...	2	Phagedænic ulceration in groin 3; "vaccino-gummata" 1.
2	1	...	3	...	...	...	...	3	...	...	3	See Special Summary.
...	...	...	...	...	...	...	...	...	...	...	...	See Special Summary.
...	1	8	2	...	...	...	...	10	...	1	...	Erysipelas 1; 1 too advanced for operation; 2 ulcerating on admission.
2	2	9	12	1	...	...	...	17	2	3	4	Pyæmia 1 (fatal); erysipelas 1; 3 too advanced for operation; 1 also had lipoma of back removed.
1	1	3	1	...	...	...	...	4	...	1	1	Second recurrence 1.
...	1	1	...	...	...	...	...	1	...	1	...	
...	...	...	...	1	...	...	...	...	...	...	1	See Special Summary.
1	1	1	6	3	...	...	...	2	6	2	2	Fatal cases, exhaustion 1 (colotomy before admission); shock 1 (after operation for excision and enterorrhaphy).
...	...	1	...	...	...	...	...	1	...	...	...	See 'Pathol. Soc. Trans.,' Feb., 1890.
...	...	2	1	1	...	...	...	1	3	...	...	1 case admitted three times.
...	...	2	...	1	...	...	...	1	2	...	...	
...	1	1	1	...	...	...	...	3	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	Same case.
1	3	11	8	...	...	...	...	13	4	3	3	Fatal cases; pneumonia 2; gangrene of lung 1; also epithelioma of nipple in 1 (male).
...	...	1	...	...	...	...	...	...	...	1	...	Unfit for operation.
...	...	1	...	...	...	...	...	1	...	...	...	
...	2	1	2	...	...	...	...	3	...	2	...	Discharged at own request 2.
1	1	1	2	...	...	...	...	2	1	1	1	
1	4	2	...	...	...	...	...	4	2	1	...	
...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	Commenced in sebaceous cyst.
...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	Refused operation.

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12		C.	R.	U.	D.	
...	1	1	3	...	...	...	...	4	1	...	1	...	Of ear 1; eyelid 1; nose 2; cheek 1; scalp 1 (fatal, invading brain).
...	...	2	...	...	...	...	...	1	...	1	...	...	1 pigmented (had been injected with L. ferri perchlor.). See Special Summary.
...	1	1	...	...	...	...	...	1	...	1	...	...	1 melanotic (female); 1 same case as noted above.
...	1	...	...	...	...	...	...	...	...	1	...	...	Unfit for operation.
...	...	3	2	...	...	...	...	4	1	...	...	...	Excision 4; laryngotomy and partial removal 1.
...	2	1	...	...	...	...	...	1	...	1	1	...	Excision 2 (1 fatal from pneumonia); 1 too advanced for operation.
...	1	...	...	...	...	...	...	...	...	1	...	...	Too advanced for operation.
...	...	2	1	...	...	...	...	2	1	...	...	...	1 case admitted twice (recurrent spindle-celled sarcoma); 1 "adeno-sarcoma."
1	...	...	...	...	...	...	...	...	...	1	...	...	Secondary to sarcoma of breast.
...	...	1	...	...	...	...	...	1	...	...	...	...	Recurrences 1885 and 1890.
...	1	...	...	1	...	...	...	...	...	2	...	...	"Mixed sarcoma" 1; "small round-celled" 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	Secondary growths in viscera.
...	...	...	2	...	...	...	...	...	...	2	...	...	1 ? from spermatic cord.
...	...	...	1	1	...	...	...	...	2	...	...	...	Same case, readmitted for recurrence after removal of primary growth.
...	...	...	1	...	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	Acute septicæmia.
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	...	} See 'Pathol. Soc. Trans.,' 1889; cystic fibro-sarcoma.
...	...	...	...	1	...	...	...	1	...	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	Too advanced for operation.
...	1	1	...	...	...	...	...	...	1	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Abdominal section.
...	1	...	...	...	...	...	...	...	1	...	...	...	Aspirated.
...	...	...	3	...	...	...	...	2	...	1	...	...	Supra-pubic cystotomy 2.
...	1	...	...	...	...	...	...	1	...	...	...	...	Suppurating; incision.
...	1	...	...	...	...	...	...	...	...	1	...	...	Too advanced for operation.
...	1	...	...	...	...	...	...	...	1	...	...	...	Supposed sarcoma; refused treatment.
...	1	...	...	...	...	...	...	...	1	...	...	...	? Schirrus or chr. mastitis; refused treatment.
...	4	2	...	...	...	...	...	6	...	...	...	...	Measles 1; all of breast.
...	1	3	2	...	...	...	...	5	...	1	...	...	Tongue 1; larynx 1; perinæum 1; penis 2; vulva 1.
...	...	1	1	...	...	...	...	2	...	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	...	Lip.
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	1	...	...	...	...	1	1	...	...	...	Same case; tonsil.

TABLE I.—*Abstract, showing Diseases in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated
LOCAL DISEASES—continued.																		
Angeioma . . .	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	3	...
Nævus . . .	4	4	7	...	1	...	...	...	...	...	...	...	...	...	2	1	5	...
Neuroma . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Exostosis . . .	3	5	...	1	2	3	...	2	...	...	...	...	...	...	...	1	5	2
Parotid tumour . . .	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...
" Fibroid " . . .	...	5	...	...	...	...	3	2	...	...	...	...	...	...	1	...	5	...
Myxo-fibroma . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Epulis . . .	1	3	...	1	1	...	...	2	...	...	...	...	...	...	1	...	3	...
Fibroma . . .	2	2	...	...	...	2	1	1	...	...	...	...	...	1	...	...	3	...
Keloid . . .	2	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	2	...
Lipoma . . .	4	4	...	...	1	2	1	2	...	2	...	...	...	...	1	...	7	...
Fibro-lipoma . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Myxoma . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Nasal polypus . . .	3	2	...	...	1	2	...	...	2	...	...	...	...	...	...	...	5	...
<i>Cysts—</i>																		
Ranula . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Mylohyoid . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Of neck . . .	1	2	...	...	1	1	...	...	...	1	...	...	...	...	1	...	2	...
Sebaceous cyst . . .	2	5	...	...	...	3	2	...	...	2	...	...	...	...	1	...	5	1
Of breast . . .	...	4	...	...	...	...	...	4	...	...	...	...	...	...	2	1	1	...
Of epididymis . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Ovarian . . .	...	7	...	...	...	1	4	1	...	1	...	...	...	...	3	3	1	...
Hydatid (abdominal) . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
NERVOUS SYSTEM.																		
Paræsthesia of hand . . .	4	...	...	...	...	2	1	1	...	...	...	...	...	2	1	...	1	...
<i>Neuralgia—</i>																		
Supra-orbital . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
3rd div. of 5th cranial . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
" Lumbar " . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Spasmodic contraction of stump . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Epileptiform convulsions . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Lateral sclerosis . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12		C.	R.	U.	D.	
...	...	1	2	...	...	...	...	3	...	...	...	...	Face 1; shoulder 1; wrist 1.
...	2	4	2	...	...	...	...	5	2	1	...	...	One transferred for ? erysipelas.
...	...	1	...	...	...	...	...	1	...	...	...	...	Old amputation of leg.
1	4	2	1	...	...	...	...	6	1	1	...	...	Of pelvis 1; tibia 1; superior maxilla 1; sub- ungual 5.
1	...	1	...	...	...	...	...	1	...	1	...	...	Chondro-adenoma 1; refused treatment 1 (recurrent growth).
...	2	1	1	...	...	1	...	1	3	1	...	...	All of uterus; hysterectomy 1, fatal; Apostoli's method 1, relieved.
1	...	...	...	...	...	...	...	...	...	...	...	...	1 Path. Soc., Feb., 1890.
1	1	2	...	...	...	...	...	3	...	1	...	...	Superior maxilla 2; inferior maxilla 2; 1 myeloid.
...	2	2	...	...	...	...	...	4	...	...	...	...	
...	...	2	...	...	...	...	...	2	...	...	...	...	Of nose.
...	2	6	...	...	...	...	...	8	...	...	...	...	1 transferred for erysipelas.
...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	...	Of neck.
2	1	1	1	...	...	...	...	4	1	...	...	...	2 old cases of naso-orbital tumour.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	...	10 months' duration; excised.
...	2	1	...	...	...	...	...	2	1	...	...	...	2 congenital; 1 probably cyst in new growth.
1	3	2	1	...	...	...	...	7	...	...	...	...	
...	...	2	2	...	...	...	...	4	...	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	...	
...	...	2	5	...	...	...	...	7	...	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	...	Opened through abdominal wall, primary seat not ascertained.
...	...	1	3	...	...	...	...	1	3	...	...	...	Old wound of median nerve 2; do. of ulnar 1; old contusion of ulnar 1.
...	...	1	...	...	...	...	...	1	...	...	...	...	Readmission; excision of Meckel's ganglion in 1888; supra-orbital nerve stretched.
...	...	...	1	...	...	...	...	1	...	...	...	...	Treated with antipyrin.
...	1	...	...	...	...	...	...	...	1	...	...	...	Discharged at own request; nephrectomy at Man- chester in 1886. No calculus found.
...	...	1	...	...	...	...	...	1	...	...	...	...	Amputation of thigh in 1875.
1	...	...	...	...	...	...	...	1	...	...	...	...	Transferred to Medical O. P. department.
...	1	...	...	...	...	...	...	...	...	1	...	...	

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
CIRCULATORY SYSTEM.																		
<i>Aneurysm—</i>																		
Com. carotid . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Int. carotid . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Subclavian . . .	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Radial . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Ulnar . . .	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Femoral . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Popliteal . . .	3	...	...	...	...	1	2	...	...	...	...	...	1	1	...	...	1	...
Hæmatoma . . .	9	2	...	2	1	4	2	2	...	...	9	1	...	1	...	...	...	...
Phlebectasis . . .	13	4	...	...	2	14	1	...	...	...	...	...	...	2	1	...	13	1
Phlebitis . . .	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Thrombosis . . .	...	3	...	...	...	1	1	...	1	...	2	...	1	...	...	...	...	...
Hæmophilia . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
LYMPHATIC SYSTEM.																		
Lymphangitis . . .	9	1	...	1	3	3	1	...	1	1	...	2	4	...	...	...	...	4
Adenitis . . .	4	2	1	...	2	3	...	...	...	...	1	2	...	2	...	...	...	1
Tuberculosis of glands	14	10	...	4	9	7	3	...	...	...	...	...	2	2	3	1	15	1
DUCTLESS GLANDS.																		
Bronchocele . . .	1	3	...	...	1	2	...	1	...	...	...	...	...	...	...	2	2	...
RESPIRATORY SYSTEM.																		
Ozæna . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Fistula after empyema	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
DIGESTIVE SYSTEM.																		
Stomatitis . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Acute glossitis . . .	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Chronic do. . . .	4	...	...	...	...	...	...	2	1	1	...	...	...	...	1	1	2	...
Stricture of œsophagus	...	2	...	...	...	...	...	1	1	...	...	...	...	...	1	...	1	...
Hernia—																		
Inguinal, reducible	21	2	3	...	11	1	1	2	2	3	...	1	...	...	1	1	19	1
" irreducible	8	...	...	...	1	2	1	1	2	1	...	...	...	...	1	...	7	...
" strangulated	33	2	4	...	3	8	6	5	4	5	32	2	...	...	...	...	...	1
Femoral, reducible	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
" irreducible	2	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	1	...
" strangulated	4	19	...	...	1	1	4	...	7	10	19	2	...	...	...	...	...	2

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	1	...	...	...	...	...	1	...	...	...	No surgical treatment.
...	...	1	...	...	...	...	...	...	...	1	...	Spontaneous rupture (also aneurysm of common carotid).
...	...	1	...	...	...	...	...	1	...	...	...	Transferred to medical side for paraplegia of arm.
...	...	1	...	...	...	...	...	1	...	...	...	} Following punctured wound; sac excised after ligature.
...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	Lig. ext. iliac art.
...	...	...	1	...	1	1	...	3	...	...	...	See Special Summary.
2	4	2	3	...	...	...	...	11	...	...	...	1 case of hæmophilia readmitted.
...	5	6	5	1	...	...	...	12	2	2	1	1 death from pyæmia.
...	...	...	1	...	...	...	...	1	...	...	...	
...	1	1	1	...	...	...	...	3	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	1	No cause for death found at P.M.
...	7	2	1	...	...	...	...	10	...	...	...	
2	2	2	...	...	...	...	...	6	...	...	...	
1	7	11	5	...	...	...	...	13	5	1	1	Glands excised in 15; fatal case admitted with acute pneumonia (gangrene of lung).
...	1	1	...	2	...	...	...	3	...	1	...	1 cystic; 1 pulsating.
...	1	...	...	...	...	...	...	...	...	1	...	Old syphilitic rhinitis.
...	...	...	1	...	...	...	...	1	...	...	...	Readmitted 4 months later to Medical Ward, died from pneumothorax.
...	...	1	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	Abscess; ? cause.
...	...	2	2	...	...	...	...	2	2	...	...	Syphilitic 2; ? epithelioma 1.
1	...	...	1	...	...	...	...	...	1	...	1	1 fatal case after gastrostomy for stricture, after HCl poisoning. See Medical Report.
3	3	5	9	2	...	...	...	12	7	3	1	} Varicocele 1; hydrocele 1; 1 developed parotitis after operation; fatal case dying on admission.
1	...	4	2	1	...	...	...	5	2	1	...	
8	9	7	7	4	...	...	...	27	1	...	7	} See Hernia Table, Special Summary.
...	...	...	1	...	...	...	...	1	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	
4	3	11	5	...	...	...	...	20	...	...	3	

according to authorised Nomenclature—continued.

Duration of residence.								Result.			Remarks.	
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.		D.
...	...	1	...	...	...	...	...	1	...	...	...	} See Hernia Table, Special Summary. Hernia reduced before admission; inflammation of sac after forcible taxis.
1	...	1	...	...	...	...	...	1	...	...	1	
...	...	...	1	...	...	...	...	1	...	...	...	
...	1	...	1	...	...	...	...	1	...	...	1	See Special Summary.
...	...	...	1	...	...	...	...	...	...	...	1	Perfor. vermif. appendix, dying on admission. Exploratory laparotomy.
1	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	Discharged at own request before operation 4. 1 refused operation. Syphilitic.
3	3	17	1	...	...	...	...	19	1	4	...	
...	1	...	2	...	...	...	...	...	2	1	...	
...	...	...	...	1	...	...	...	...	1	...	...	
2	1	...	1	...	...	...	...	3	1	...	...	
...	1	2	1	...	...	...	...	4	...	...	...	
...	1	1	...	...	...	...	...	2	...	...	...	
3	4	11	4	1	...	...	...	20	2	1	...	Phthisis in 3; chron. synov. knee (? tubercular) 1.
...	1	1	1	...	...	...	...	3	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	Enteritis after, ? erysipelas before, admission.
1	...	...	...	...	...	...	...	...	1	...	...	Old rad. cure of hernia.
1	...	...	...	...	...	...	...	1	...	...	...	After circumcision.
...	1	...	...	...	...	...	...	1	...	...	...	With acute hydrocele.
...	1	...	...	...	...	...	...	1	...	...	...	Old amputation for tubercular knee 1; phthisis 1. Castration, after failure of medicinal treatment.
...	...	2	1	2	...	...	...	1	3	1	...	
...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	
1	3	2	1	...	...	...	...	6	1	...	...	
...	1	...	1	...	...	...	...	2	...	...	...	
...	14	3	1	...	...	...	...	18	...	...	...	
...	3	5	5	...	...	...	...	11	2	...	...	
1	...	2	...	...	...	...	...	2	1	...	...	
...	1	4	...	1	...	...	...	5	...	1	...	1 refused treatment.
...	...	1	1	...	...	...	...	...	2	...	...	Same case, twice admitted.
...	3	...	2	...	...	...	...	5	...	...	...	
...	1	1	...	...	...	...	...	1	...	1	...	
1	...	...	...	...	...	...	...	...	...	...	1	Spontaneous rupture during parturition.
1	...	...	...	...	...	...	...	...	1	...	...	Transferred to Adelaide.
...	...	...	1	...	...	...	...	...	1	...	...	Readmission. See 1888.
...	1	...	1	...	...	...	...	1	...	1	...	1 refused treatment.
...	1	5	...	...	...	...	...	6	...	...	...	Suppuration in 5.
...	...	1	1	...	...	...	...	1	1	...	...	Same case twice admitted.

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.								Chronic.	Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12				
GENITO-URINARY SYSTEM—																				
<i>continued.</i>																				
Mastitis, tubercular . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...		
Urinary abscess . . .	6	...	...	...	...	1	1	3	...	1	2	1	2	1	...	...	...	...		
Urethral fistula . . .	8	...	...	...	2	1	1	3	...	1	1	...	1	1	1	2	2	...		
" stricture . . .	27	...	...	...	1	4	9	9	2	2	...	...	...	1	2	1	23	...		
Vesico-vaginal fistula . . .	...	3	...	...	...	2	1	...	...	...	...	...	...	...	1	...	2	...		
Incontinence of urine . . .	...	2	...	...	1	...	1	...	...	...	...	...	...	...	...	1	1	...		
Retention of urine . . .	14	...	1	...	...	1	1	2	2	7	14	...	...	...	...	...	...	...		
Extravasation of urine . . .	4	...	...	...	...	...	...	2	...	2	2	...	...	...	...	...	...	...		
Vesical irritation . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...		
Cystitis (chronic) . . .	5	1	...	...	...	...	...	...	2	4	...	...	1	...	...	...	5	...		
" tubercular of bladder . . .	2	1	...	...	1	1	...	1	...	...	...	...	1	1	...	...	1	...		
Prostatitis, acute . . .	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	2	...		
" chronic . . .	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...		
Hæmaturia . . .	4	...	...	...	1	2	...	...	...	1	1	1	1	...	...	...	1	...		
Renal calculus . . .	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	1		
Vesical calculus . . .	3	...	...	1	1	...	1	...	...	...	...	...	...	1	...	...	2	...		
Hydronephrosis . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...		
Pyonephrosis . . .	3	1	...	...	...	1	2	...	...	1	...	...	...	...	...	2	2	...		
Renal fistula . . .	1	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...		
"Catheter fever" . . .	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...		
OSSEOUS SYSTEM.																				
Acute periostitis—																				
Femur . . .	4	...	...	...	3	1	...	...	...	...	...	3	1	...	...	...	...	...		
Tibia . . .	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...		
Chronic periostitis . . .	1	1	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...		
Osteomyelitis . . .	1	2	...	1	2	...	...	...	...	...	1	1	1	...	...	...	...	...		
Epiphysitis, acute . . .	4	1	1	2	2	...	...	...	...	...	1	2	1	...	...	...	...	1		
" chronic . . .	2	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	3	...		
Abscess of tibia . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...		
Osteitis—																				
Humerus . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Femur . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Tibia . . .	1	2	...	...	1	...	2	...	...	...	...	...	...	1	...	...	2	...		
Caries—																				
Multiple . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...		
Mastoid . . .	4	2	3	...	1	1	...	1	...	...	1	...	...	1	...	...	3	1		
Malar . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...		
Sternum . . .	3	1	...	...	1	...	...	1	2	...	...	...	...	...	1	1	2	...		
Rib . . .	2	1	1	2	...	...	...	...	...	...	...	...	2	...	...	...	1	...		
Scapula . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...		

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
...	...	1	...	...	...	...	...	1	...	...	...	
...	...	5	1	...	...	...	...	5	...	...	1	
...	2	2	3	1	...	...	...	6	1	1	...	
1	5	9	10	1	1	...	...	19	4	2	2	2 old traumatic cases.
...	...	...	...	2	1	...	...	1	1	...	1	1 after lithotomy; 2 after parturition.
...	...	2	...	...	...	...	...	1	1	1	...	
1	4	6	2	1	...	...	...	11	2	...	1	
...	...	2	2	...	...	...	...	2	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	Supposed calculus; retroflexion of uterus.
...	2	2	2	...	...	...	...	5	...	...	1	Hæmaturia 2; supra-pubic cystotomy 1.
...	...	...	...	1	2	...	...	...	...	...	3	Tuberc. dis. of whole genito-urinary tract 1.
...	...	...	...	1	...	...	...	1	...	...	...	Gonorrhœa; gon. rheumatism.
...	1	1	...	...	...	...	...	...	1	...	1	Ulcer of bladder and calculus in 1, fatal.
1	3	...	...	...	...	...	...	3	1	...	...	Gonorrhœa 1; doubtful origin 3.
1	...	...	1	...	...	...	...	...	...	...	2	Nephrectomy 2; P.M. in 1, empyema.
...	...	...	1	2	...	...	...	2	1	...	...	Supra-pubic op. 1; lateral 1; op. through old fistula for recurrence of stone 1. See 1887.
...	...	1	...	...	...	...	...	1	...	...	...	See "Injuries to Abdomen," 1888, Special Summary.
...	...	...	1	3	...	...	...	1	3	...	...	Nephrotomy 2; nephrectomy 1.
...	...	1	1	...	...	...	...	...	2	...	...	Old case renal calculus 1; old pyonephrosis 1.
...	1	...	...	...	...	...	...	1	...	...	...	
...	...	3	1	...	...	...	...	4	...	...	...	
...	...	...	...	...	...	1	...	1	...	...	...	
...	...	1	1	...	...	...	...	2	...	...	...	Femur 1; fibula 1.
...	...	...	...	3	...	...	...	2	1	...	...	Tibia 2; os calcis 1.
...	1	1	...	2	1	...	...	4	1	...	...	Chronic pyæmia 1.
...	...	1	2	...	...	...	...	3	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	"Caries sicca."
...	...	...	1	...	...	...	...	...	1	...	...	
...	2	...	1	...	...	...	...	1	2	...	...	Amputation 1.
...	...	...	...	...	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	Readmission.
...	3	2	1	...	...	...	...	4	1	...	1	Fatal case; suppuration in lateral sinus.
...	...	...	...	1	...	...	...	1	...	...	...	
...	...	3	1	...	...	...	...	2	2	...	...	2 probably gummatous; 1 tubercular (trephining of sternum).
...	1	1	...	1	...	...	...	2	1	...	...	
...	...	...	...	...	1	...	...	...	1	...	...	Also of skull; tubercular.

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12		C.	R.	U.	D.	
...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	...	
...	...	...	...	...	2	...	1	2	...	...	1	...	Fatal case, lardaceous disease (secondary infection of hip).
...	1	1	3	2	...	2	...	5	4	...	...	...	Syme's amputation 3; arthrectomy of tarsal joints 3.
...	...	...	1	2	...	...	...	1	2	...	...	...	Resection 1; transferred for varicella.
...	1	...	...	...	...	...	...	...	...	1	...	...	Syphilitic.
1	...	1	1	...	...	...	...	...	2	1	...	...	
...	3	1	1	...	...	...	...	3	1	1	...	...	Sequestrotomy 2.
...	...	...	...	1	...	...	...	...	1	...	...	...	Readmission.
...	...	2	...	...	...	...	...	1	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Amputation 1.
...	1	1	...	1	1	...	...	2	2	...	...	...	Sequestrotomy 1.
...	1	1	6	3	...	...	...	7	4	...	...	...	Sequestrotomy 1.
...	...	...	...	1	...	...	...	...	...	1	...	...	1 amputation of toe; 2 subastragalar amputation.
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	...	3	4	...	...	...	...	3	3	1	...	...	All of knee-joint; aspiration 1; arthrotomy 1 (for supposed foreign body).
...	1	...	1	...	...	...	...	...	1	1	...	...	Both tubercular.
...	...	3	1	...	...	...	...	4	...	...	...	...	Arthrotomy 3; excision 1.
...	1	2	2	...	...	...	...	4	3	...	...	...	Arthrectomy 3; excision 3 (1 followed by amputation).
...	...	1	1	...	...	...	...	...	2	...	...	...	
...	1	1	...	1	...	1	...	2	...	2	...	...	
1	2	4	9	15	11	8	...	13	33	2	2	...	Excision 14 (double excision 1); old excision 3; 1 old cured case came up for inspection; 1 transferred for scarlatina.
...	5	3	7	13	4	3	...	14	18	3	...	...	Excision 4; arthrectomy 12 (followed by amputation 1); amputation 1; transferred for erysipelas 3; for scarlatina 2; 1 syphilitic; rest tubercular.
...	...	3	2	3	1	1	...	6	4	...	...	...	Arthrectomy 4 (followed by amputation 1); incision and scraping 3.
...	...	1	1	1	...	...	...	2	1	...	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	"Rheumatoid."
...	...	1	...	1	...	...	...	1	...	...	1	...	Hip 1, fatal. See Special Table IV. Knee 1 (probably acute epiphysitis).
...	1	...	1	1	...	...	...	2	1	...	...	...	Knee 1; knee and ankle 1; ankle 1.

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12		C.	R.	U.	D.	
...	1	1	...	...	...	...	...	...	1	1	...	...	Fibrous.
...	1	...	1	...	...	...	...	...	2	...	...	...	"Traumatic exostosis" 1; old dislocation 1.
...	...	...	1	1	...	1	...	...	1	2	...	...	All fibrous after old arthritis.
1	...	7	5	3	1	1	...	...	6	9	3	...	Osteotomy 1; excision 1; extension 1; massage 2; transferred for measles 1.
...	...	...	2	...	...	...	...	...	2	...	...	...	} Tubercular; disease still present.
...	...	...	2	...	...	...	...	...	1	1	...	...	
...	2	1	1	...	1	...	...	...	3	...	2	...	
1	1	1	...	...	...	...	...	...	1	2	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	5	4	3	1	...	1	...	3	9	...	2	Lumbar abscess 6; psoas abscess 2 (1 double), fatal cases; lardaceous disease 1; "scrofulous kidney" 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Psoas abscess.
...	...	3	2	3	...	...	...	...	2	4	2	...	Lumbar abscess 2; psoas abscess 4 (1 double); phthisis 1; lardaceous disease 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Suppurating bursal cyst; transferred for erysipelas.
...	5	8	3	...	...	...	...	...	15	...	...	1	Transferred for erysipelas (fatal case). See Special Table I.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Excised.
2	2	5	...	...	...	...	...	...	7	2	...	...	4 excised; 2 aspirated.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	1	...	...	...	...	1	1	...	...	Excision 1 (cured).
...	...	1	...	...	...	...	...	...	1	...	...	...	Tendons sutured.
1	...	...	...	...	...	...	...	...	1	...	...	...	Excised.
...	...	5	1	2	...	...	...	...	5	2	1	...	Tenotomy 4; apparatus fitted 2.

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
...	...	2	2	1	1	...	...	5	...	1	...	Tenotomy 6; Mickulicz's operation 1 (see 'Medical Soc. Transac.').
...	...	3	2	2	...	...	...	6	1	...	...	
...	6	...	...	...	...	...	...	...	1	...	...	
1	2	3	4	1	...	2	...	5	6	2	...	Osteoplastic resection 3.
...	2	2	...	2	...	...	...	3	1	...	...	
...	2	3	1	...	...	...	...	4	1	1	...	Osteoplastic section 1; forcible flexion and splint 1.
...	...	1	...	...	1	...	...	2	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	Plastic operation for lengthening tendons 1 (cured).
...	...	...	2	1	...	...	...	1	2	...	...	
...	...	2	3	1	1	...	...	4	3	...	...	1 transferred for scarlatina.
...	...	...	2	...	...	...	...	1	1	...	...	
...	...	...	...	1	1	...	...	1	1	...	...	Osteotomy 12; apparatus 2.
...	...	2	8	4	1	...	...	12	1	2	...	
...	...	...	...	1	...	...	...	1	...	...	...	} Faulty union after fracture.
...	...	...	1	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	
...	2	3	2	...	...	...	...	4	1	1	1	Cleft palate in 5 (not treated).
...	...	3	2	...	...	...	...	2	...	3	...	
1	1	2	4	3	...	...	...	5	3	3	...	3 readmissions; complete 4; partial 7; transferred for scarlatina 1.
...	...	...	...	...	...	...	...	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	Morton's injection 3 (relieved 2, unrelieved 1); fatal cases: erysipelas 1; meningitis 1; marasmus 2.
2	2	...	1	3	...	...	...	...	2	2	4	
...	...	1	...	...	...	...	...	...	1	...	...	Cyst and fistula dissected out.
...	1	...	...	...	...	...	...	1	...	...	...	
1	2	...	1	...	...	...	...	...	...	4	...	Congenital hydrocele 1.
...	...	...	...	1	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	Congenital hydrocele 1.
...	1	...	2	...	...	...	...	2	...	1	...	
1	3	1	...	...	...	...	...	5	...	...	...	Congenital hydrocele 1.
...	...	...	...	...	...	...	...	...	...	...	1	
...	...	1	1	...	...	...	...	...	...	2	...	Congenital hydrocele 1.
...	...	...	1	...	...	...	...	1	...	...	...	

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
SKIN AND SUBCUTANEOUS TISSUE.																		
Sinus	7	4	1	...	2	6	1	1	...	...	...	...	2	2	2	5	...	...
Abscess—																		
Multiple	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Head	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Face	2	...	...	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...
Neck	6	4	...	1	2	4	1	2	...	...	...	2	2	2	2	...	1	1
Axilla	1	2	2	...	...	1	...	...	...	...	1	1	1	...	...	...	...	...
Thoracic wall	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	1
Elbow	1	1	...	...	...	...	...	1	1	...	...	1	...	1	...	...	...	...
Forearm	2	...	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...
Abdominal wall	1	1	...	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...
Lumbar	3	2	...	2	...	1	...	1	1	...	...	...	...	2	2	...	1	...
Sacral	2	2	2	...	...	2	...	...	...	...	...	2	...	1	...	...	...	1
Gluteal	3	3	1	...	1	2	...	2	...	...	...	1	2	2	1	...	...	...
Iliac	4	...	...	...	2	1	1	...	...	...	...	...	1	1	...	1	1	...
Inguinal	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Perinæal	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Thigh	7	2	3	2	2	2	...	...	...	...	1	4	...	2	2	...	...	...
Knee	2	2	2	...	1	...	...	1	...	...	...	1	3	...	...	...	...	...
Popliteal	2	2	...	3	1	...	...	...	...	...	1	2	...	...	...	...	...	1
Tibial	1	1	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...
Foot	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Inflammatory swelling	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Cellulitis—																		
Scalp	2	1	...	...	...	...	2	...	...	1	2	1	...	...	...	...	...	...
Face	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Neck	4	...	...	...	...	2	1	1	...	...	1	2	...	...	...	...	...	1
Sternal region	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Arm	3	1	...	...	...	1	...	2	1	...	3	...	1	...	...	...	...	...
Forearm and hand	6	1	...	1	...	2	3	1	...	...	3	2	...	...	...	...	...	2
Hand (digits)	6	2	...	...	...	3	1	1	2	1	1	6	...	...	...	...	...	1
Scrotum	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Thigh	2	...	...	...	1	...	...	1	...	...	1	1	...	...	...	...	...	...
Leg	5	2	1	1	...	3	...	1	1	...	...	3	1	...	...	...	...	3
Foot	3	...	1	...	...	1	1	...	...	...	1	2	...	...	...	...	...	...
Ulcer—																		
Nose	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Leg	6	1	...	...	2	1	1	2	1	...	...	...	1	...	1	...	5	...
Foot	1	1	...	...	...	2	...	...	...	...	1	...	...	...	...	...	1	...
Onychia	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Hypertrophy of toe-nail	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Ingrowing toe-nail	2	4	...	...	3	1	2	...	...	...	...	...	...	...	1	1	4	...

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
1	3	3	2	1	...	1	...	3	6	2	...	1 transferred to "Home."
...	...	...	1	...	...	...	...	1	...	...	...	Tubercular.
...	...	1	...	...	...	...	...	1	...	...	...	Supposed hæmatoma.
...	1	1	...	...	...	...	...	2	...	...	...	
1	6	3	...	...	...	...	...	7	1	1	1	Fatal case, acute tuberculosis.
1	1	...	1	...	...	...	...	2	...	...	1	1 transferred for erysipelas; fatal case, exhaustion (7 months old).
...	...	2	...	...	...	...	...	2	...	...	...	
...	...	1	1	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	2	...	...	...	
...	...	1	1	...	...	...	...	2	...	...	...	
...	1	2	2	...	...	...	...	2	2	1	...	
...	2	2	...	...	...	...	...	3	...	...	1	
1	1	1	1	2	...	...	...	4	2	...	...	1 transferred for erysipelas, discharged at own request.
...	1	...	2	1	...	...	...	2	1	1	...	
...	...	1	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	Transferred for scarlatina.
...	3	3	1	2	...	...	...	8	1	...	...	1 taken out by parents.
...	1	3	1	...	...	...	...	4	...	...	...	1 transferred for erysipelas.
...	2	2	...	...	...	...	...	4	...	...	...	
...	1	1	...	...	...	...	...	2	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	Of thigh; ? gumma.
...	...	3	...	...	...	...	...	3	...	...	...	Scalp wounds 3.
...	...	1	...	...	...	...	...	1	...	...	...	
...	1	3	...	...	...	...	...	4	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	
...	...	2	1	1	...	...	...	4	...	...	...	
...	3	1	2	1	...	...	...	6	1	...	...	Suppur. in inf. radio-ulnar joint 1.
...	1	2	4	1	...	...	...	8	...	...	...	1 after comp. dislocation of thumb.
...	...	1	...	...	...	...	...	...	...	1	...	? cause.
...	...	2	...	...	...	...	...	2	...	...	...	
...	3	4	...	...	...	...	...	7	...	...	...	
...	1	1	1	...	...	...	...	3	...	...	...	Syme's amputation 1.
...	1	...	...	...	...	...	...	...	...	1	...	? Syphilitic.
1	2	4	...	...	...	...	...	3	4	...	...	
2	...	...	...	...	...	...	...	1	...	1	...	Melancholia 1.
...	...	...	1	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	
...	4	2	...	...	...	...	...	5	1	...	...	Also stricture of rectum (dilated) 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
SKIN AND SUBCUTANEOUS																		
TISSUE—continued.																		
Carbuncle	2	1	...	...	1	1	...	...	...	1	1	1	...	...	...	...	...	1
Gangrene, foot	1	3	...	...	...	...	...	2	1	1	...	1	...	2	...	...	1	...
„ toe	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Phagedænatus ulcer . .	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Lupus, face	4	5	1	...	5	1	...	1	1	...	...	...	...	...	...	1	7	1
„ foot	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Perfor. ulcer, foot . . .	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...
Painful cicatrix, foot . .	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...
Erythema nodosum . . .	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Acne rosacea	...	2	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...
Pemphigus	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Acute eczema	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Impetigo	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
MEDICAL AND MISCEL-																		
LANEOUS.																		
Epistaxis	2	1	...	...	...	2	...	...	1	...	3	...	...	...	...	...	...	...
Rheumatism	1	1	...	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...
Varicella	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Hæmophilia	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Hysteria	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Lumbar pains	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Pain in hip	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...
„ knee	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Supposed hæmorrhoids . .	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Old amputation of thigh .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
„ „ leg	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Malingering	3	1	...	...	1	2	1	...	...	...	1	...	1	...	...	2	...	...
Total "Diseases"	873	562																
	{		1435															

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
...	1	2	...	...	...	...	...	3	...	...	...	Amputation.
...	1	2	1	...	...	...	...	1	...	...	3	
...	...	...	1	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	Gangrenous ulcer in groin.
1	3	2	3	...	...	...	...	4	4	1	...	
...	...	1	...	...	...	...	...	1	...	...	...	Chronic nephritis and ataxic symptoms in fatal case. Same case twice admitted, cure by excision.
...	...	1	1	...	...	...	...	1	...	1	...	
...	...	2	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	Same case twice admitted, ? "acne lupus." Congenital syphilis; eruption on hands and feet. "Eczema-erysipelas" from head to shoulder.
...	2	...	...	...	...	...	...	...	2	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	1	...	...	...	"Eczema-erysipelas" from head to shoulder.
1	...	...	...	...	...	...	...	...	1	...	...	
1	...	2	...	...	...	...	...	3	...	...	...	Post. nares plugged.
1	1	...	...	...	...	...	...	1	1	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	Transferred to medical side.
1	...	...	...	...	...	...	...	...	...	...	1	
...	1	...	...	...	...	...	...	1	...	...	...	? cause; chronic constipation. } No objective signs. Sent up a case of hæmorrhoids; none found on admission. Came up for artificial limb; painful stump; spicule of bone removed.
...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	
3	1	...	...	...	...	...	...	1	...	3	...	
								906				
								321				
								126				
								82				
								1435				

TABLE II.—*Abstract showing Injuries, &c., in*

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-12	Hrs. 12- 24	Dys. 1-3	Dys. 4-6	Dys. +6	Not stated.
GENERAL INJURIES.																
Shock	2	...	...	...	...	1	...	...	...	1	2	...	...	...	...	...
Burns	24	27	24	4	7	3	4	3	7	4	44	3	2	...	2	...
Scalds	32	14	32	9	2	1	...	2	...	...	39	1	6	...	...	...
Hydrochloric acid burn .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
LOCAL INJURIES.																
<i>Head—</i>																
Contusion of scalp . .	...	2	...	...	...	...	1	...	...	1	2	...	...	...	...	...
Wound of scalp . . .	13	3	1	...	4	4	3	3	...	2	15	...	1	...	...	...
Concussion	80	27	10	20	18	18	15	8	3	5	94	2	1	...	...	...
Fracture of skull—																
Vault, simple	2	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...
" " depressed . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
" compound	2	1	...	1	...	...	1	1	...	...	3	...	...	...	...	...
" " depressed . .	6	1	...	2	1	2	1	1	...	...	6	...	1	...	...	...
Base	20	2	2	3	...	2	9	3	1	2	20	...	1	1	...	...
" doubtful	1	1	2	...	...	...	...	...	...	...	2	...	...	...	...	...
Separation of suture . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Traumatic cephalhydrocele	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...
<i>Face—</i>																
Contusion	3	2	...	2	1	1	1	...	...	...	5	...	...	...	...	...
Wound	2	2	...	...	1	...	2	1	...	...	3	...	1	...	...	...
Fracture of mala (compound)	2	...	...	...	...	1	...	1	...	...	2	...	...	...	...	...
" inferior maxilla (comp.)	4	...	...	...	1	1	...	1	1	...	2	1	...	...	...	1
Wounds of mouth . . .	2	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...
" of palate	3	...	...	1	...	1	...	...	1	...	3	...	...	...	...	...
" of orbit	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
" of eye	8	2	4	2	2	...	...	2	...	...	10	...	...	...	...	...
<i>Neck—</i>																
Wound of carotid artery .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
" of larynx (suicidal)	4	2	...	...	...	2	...	1	1	2	6	...	...	...	...	...
Dislocation of atlas . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
<i>Chest—</i>																
Contusion	3	...	...	1	...	...	...	2	...	...	2	...	...	...	...	1

Classes, according to authorised Nomenclature.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
1	1	...	...	...	...	...	...	2	...	...	...	Run over; no definite injury.
22	8	8	10	1	...	2	...	23	3	...	25	Transferred for scarlatina 3, for erysipelas 1; suppression of urine 2.
17	10	13	5	1	...	...	...	35	...	2	9	Transferred for scarlatina 5, for erysipelas 2; suppression of urine 1.
1	...	...	...	...	...	...	...	1	...	...	...	
2	...	...	...	...	...	...	...	2	...	...	...	
5	7	4	...	1	...	...	...	14	1	...	1	Fatal case, softening of brain (<i>contrecoup</i>). Transferred for erysipelas 1.
47	36	11	3	...	...	...	...	93	2	1	1	Fracture clavicle 1; radius 1; femur 1.
2	...	...	...	...	...	...	...	...	...	...	2	Meningeal hæmorrhage 1 (diffuse); contusion of cerebellum 1.
1	...	...	...	...	...	...	...	...	...	...	1	
2	1	...	...	...	...	...	...	1	...	...	2	Fracture sternum and cervical spine 1.
...	1	1	4	1	...	...	...	6	...	...	1	Crushed foot (amputation of toes) 1; fracture femur 1.
6	5	8	1	2	...	...	...	12	1	...	9	Fracture clavicle 1; fracture ribs, compound fracture into elbow-joint, and double Colles' fracture 1.
...	1	1	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	Parieto-occipital, age 6 months.
...	...	...	...	1	...	...	...	...	1	...	...	Readmission.
1	4	...	...	...	...	...	...	5	...	...	...	
2	2	...	...	...	...	...	...	4	...	...	...	
...	1	1	...	...	...	...	...	1	1	...	...	Also fracture superior maxilla 1.
1	2	1	...	...	...	...	...	3	...	...	1	Fatal case, pneumonia.
...	2	...	...	...	...	...	...	2	...	...	...	Of tongue and lip 1; of gums 1.
...	3	...	...	...	...	...	...	2	...	...	1	2 gunshot wounds (suicidal). Fatal case, meningitis.
...	1	...	...	...	...	...	...	...	1	...	...	Division of optic nerve.
3	6	1	...	...	...	...	...	9	1	...	...	
1	...	...	...	...	...	...	...	...	...	...	1	Dead before admission to ward.
1	1	4	...	...	...	...	...	4	...	...	2	Fatal cases: cellulitis of neck, broncho-pneumonia 1; pneumonia 1.
1	...	...	...	...	...	...	...	...	...	...	1	Run over by cab; fracture ribs, rupture of lung.
1	2	...	...	...	...	...	...	3	...	...	...	

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-12	Hrs. 12-24	Dys. 1-3	Dys. 3-6	Dys. +6	Not stated.
<i>LOCAL INJURIES—continued.</i>																
<i>Chest—</i>																
Wound	3	2	...	1	...	3	1	...	...	...	5	...	...	...	...	...
Fracture of rib . . .	11	1	1	...	...	...	2	5	3	1	11	...	...	1	...	...
Foreign body in bronchus	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...
<i>Back—</i>																
Contusion	4	...	...	...	...	1	1	2	...	...	2	...	1	...	1	...
"Sprain"	3	...	...	...	...	1	1	1	...	...	2	...	1	...	...	...
Fracture of spine . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
(?) Concussion of spinal cord	2	...	...	1	...	1	...	...	...	...	2	...	...	...	...	...
<i>Abdomen—</i>																
Contusion	7	2	1	4	2	...	1	1	...	...	8	...	1	...	...	...
Strain of abdominal wall	1	1	...	...	...	1	1	...	...	...	2	...	...	...	...	...
Wound of abdominal wall	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
„ of intestine . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Rupture of intestine . .	1	1	...	...	1	...	...	...	...	1	2	...	...	...	...	...
Injury to kidney . . .	4	...	...	...	1	3	...	...	...	...	2	1	1	...	...	...
Foreign body in digestive tract	2	...	1	...	...	1	...	...	...	...	2	...	...	...	...	...
<i>Pelvis—</i>																
Contusion of vulva . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...
„ of groin	3	...	...	1	1	1	...	...	...	...	3	...	...	...	...	...
Rupture of urethra . . .	2	...	...	...	...	1	1	...	...	...	2	...	...	...	...	...
Wound of perinæum . . .	2	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...
„ of scrotum	2	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...
Fracture of pelvis . . .	5	1	...	1	1	...	...	1	1	2	5	1	...	...	...	...
„ „ compound	...	2	...	...	...	...	1	...	...	1	2	...	...	...	...	...
<i>Upper extremity—</i>																
Wound of axilla	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ of arm	3	...	1	...	...	1	...	...	...	1	3	...	...	...	...	...
„ of elbow	3	1	...	1	2	...	...	...	1	...	2	1	1	...	...	...
„ of forearm	5	3	...	1	2	3	2	...	...	...	6	...	...	...	2	...
„ of wrist	3	3	...	1	...	1	3	1	...	...	5	...	1	...	...	...
„ of hand	7	2	...	...	3	4	1	1	...	...	7	1	...	1	...	...
Dislocation of humerus .	3	3	...	...	...	1	1	...	2	2	1	...	...	1	4	...
„ of wrist	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...

continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	3	1	1	...	...	...	...	5	...	...	...	1 suicidal, gunshot wound, with pneumothorax (see Special Summary); emphysema 1.
4	5	3	...	...	...	...	...	8	...	...	4	Rupture of lung 2; hæmothorax 1; pneumothorax.
...	...	1	...	...	...	...	...	1	...	...	...	Tracheotomy. See Summary.
1	3	...	...	...	...	...	...	4	...	...	...	
2	...	1	...	...	...	...	...	3	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	11th and 12th dorsal vertebræ; fall of 70 feet; plaster of Paris jacket.
...	1	1	...	...	...	...	...	2	...	...	...	? spinal meningitis.
2	3	4	...	...	...	...	...	9	...	...	...	Traumatic peritonitis 2; delirium tremens 1.
2	...	...	...	...	...	...	...	2	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1 Suicidal; hæmorrhage into peritoneum; irrigation.
1	...	...	...	...	...	...	...	...	...	...	...	1 Homicidal; also wound of external and internal iliac arteries.
1	...	...	1	...	...	...	...	1	...	...	...	1 Enterectomy 1 (see 'Clin. Soc. Trans.,' 1890), cured. Fatal case, moribund on admission.
...	1	2	1	...	...	...	...	4	...	...	...	Fracture clavicle 1.
1	1	...	...	...	...	...	...	2	...	...	...	1 removed from œsophagus by forceps (tooth-plate); 1 passed <i>per anum</i> (key).
...	1	...	...	...	...	...	...	1	...	...	...	
...	3	...	...	...	...	...	...	3	...	...	...	
...	1	1	1	...	...	...	...	2	...	...	...	Catheter passed under anæsthesia.
1	...	1	...	...	...	...	...	2	...	...	...	Through ischio-rectal fossa into rectum 1.
...	2	...	...	...	...	...	...	2	...	...	...	
1	2	2	1	...	...	...	...	5	...	...	...	1 Perinæal puncture for rupture of urethra 1.
2	...	...	...	...	...	...	...	...	...	...	...	Compound comminuted fracture of femur, tibia, and fibula in 1.
...	...	...	1	...	...	...	...	1	...	...	...	Opening up shoulder-joint; rupture of axillary vein; fracture and dislocation of radius and ulna; amputation at shoulder-joint.
1	...	1	1	...	...	...	...	3	...	...	...	1 gunshot; division of brachial artery 1.
1	3	...	...	...	...	...	...	4	...	...	...	1 suicidal division of basilic vein.
...	2	4	2	...	...	...	...	8	...	...	...	1 transferred for erysipelas. Division of nerves 2; amputation of wrist 1; do. above elbow-joint 1.
...	3	3	...	...	...	...	...	5	1	...	...	
3	2	3	1	...	...	...	...	8	1	...	...	Amputation of fingers 3.
...	4	2	...	...	...	...	...	3	1	2	...	
...	...	1	...	...	...	...	...	1	...	...	...	Compound; antiseptic dressing.

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-12	Hrs. 12-24	Dys. 1-3	Dys. 3-6	Dys. +6	Not stated.
LOCAL INJURIES—continued.																
<i>Upper extremity—</i>																
Dislocation of thumb . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Fracture of clavicle . . .	2	1	...	...	1	...	1	...	1	...	3	...	...	...	...	...
„ of humerus . . .	6	1	...	...	1	1	3	...	1	1	4	...	...	...	2	1
Do., compound . . .	3	1	1	1	...	...	...	1	1	...	4	...	...	...	...	...
Do., compound comminuted . . .	3	...	...	1	1	1	...	...	...	...	3	...	...	...	...	...
Ununited fracture of humerus . . .	2	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...
Compound separation of lower epiphysis of humerus . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Fracture of radius and ulna, compound . . .	2	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...
Compound fracture of ulna, simple fracture of radius . . .	1	2	...	...	1	...	...	...	...	2	3	...	...	...	...	...
Simple fracture of radius . . .	2	...	1	...	1	...	...	...	...	...	1	...	...	...	1	...
Compound fracture of radius . . .	1	1	...	...	...	1	...	1	...	...	1	...	...	1	...	...
Separation of epiphysis . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Simple fracture of olecranon . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Compound fracture of hand . . .	6	...	...	...	1	4	1	...	...	...	6	...	...	...	...	...
<i>Lower extremity—</i>																
Contusion of hip . . .	9	6	...	...	1	2	2	1	4	5	13	...	...	...	1	1
„ of thigh . . .	3	...	...	1	...	1	...	...	...	1	3	...	...	...	...	...
„ of leg . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
„ of ankle . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Wound of groin . . .	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
„ of hip . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
„ of thigh . . .	2	1	...	3	...	...	...	...	...	...	2	...	...	...	1	...
„ of knee . . .	5	1	...	...	4	2	...	...	...	...	5	...	1	...	...	...
„ of leg . . .	3	1	...	...	2	...	1	...	...	1	4	...	...	...	...	...
„ of foot . . .	1	2	...	1	1	...	1	...	...	...	2	...	1	...	...	...
Needle in skin near knee-joint . . .	...	2	...	1	1	...	...	...	...	...	1	...	...	...	1	...
„ „ of foot . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Dislocation of femur . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...
„ of fibula, compound . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ of foot, compound . . .	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Fracture of femur, neck . . .	5	8	...	...	...	...	...	1	...	12	9	1	3	...	...	...
Do., comminuted . . .	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Fracture of shaft, upper third . . .	10	7	6	4	1	...	...	1	2	3	15	1	...	1	...	...
„ „ middle third . . .	27	5	16	13	1	...	...	1	1	...	30	...	...	...	...	2
Do., comminuted . . .	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...

continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
1	...	...	...	...	...	...	...	1	...	...	...	At metacarpo-phalangeal joint; tenotomy.
...	1	2	...	...	...	...	...	3	...	...	...	1 comminuted.
1	2	3	...	1	...	...	...	4	3	...	...	Fracture of neck and subcoracoid dislocation 1; spontaneous fracture in case of old carcinoma of breast 1.
...	1	2	1	...	...	...	...	4	...	...	...	Amputation 2; also fracture radius and ulna 3.
...	...	2	1	...	...	...	...	3	...	...	...	Amputation 2.
...	...	...	...	2	...	...	...	1	...	1	...	Operation 2.
...	...	...	...	1	...	...	...	1	...	...	...	Fall from cart; delayed union from suppuration.
...	1	1	...	...	...	...	...	2	...	...	...	
2	1	...	...	...	...	...	...	2	1	...	...	
...	...	2	...	...	...	...	...	1	1	...	...	Acute suppurative periostitis, necrosis of shaft 1.
...	...	2	...	...	...	...	...	1	...	...	1	Broncho-pneumonia in fatal case (gunshot frac- ture).
...	1	...	...	...	...	...	...	...	1	...	...	Lower epiphysis; fall from tree.
...	...	1	...	...	...	...	...	...	1	...	...	
1	2	3	...	...	...	...	...	5	1	...	...	Amputation of fingers 6.
4	9	2	...	...	...	...	...	13	2	...	...	Carcinoma of breast 1 (unfit for operation).
1	1	1	...	...	...	...	...	3	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	1	...	...	...	
...	...	1	1	1	...	...	...	2	1	...	...	1 accidental division of femoral artery and vein.
1	...	4	1	...	...	...	...	6	...	...	...	Not into joint.
2	...	1	1	...	...	...	...	3	...	...	1	Fatal case (female) delirium tremens.
1	...	2	...	...	...	...	...	3	...	...	...	
1	1	...	...	...	...	...	...	2	...	...	...	1 transferred for erysipelas.
...	1	...	...	...	...	...	...	...	...	1	...	
...	...	...	...	...	1	...	...	1	...	...	...	Excision.
...	...	...	...	1	...	...	...	1	...	...	...	At super. tibio-fibular articulation; rupture of posterior tibial artery and vein; spreading traumatic gangrene; amputation.
...	...	...	...	1	...	...	...	1	...	...	...	Dislocation at ankle-joint.
...	...	2	10	1	...	...	...	10	3	...	...	Intra-capsular 8; extra-capsular 2; doubtful 3.
...	1	...	...	...	...	...	...	...	...	...	1	Death from extravasation of blood and shock.
...	...	8	7	2	...	...	...	16	1	...	...	
...	1	14	16	1	...	...	...	31	1	...	...	1 refracture.
...	...	1	...	...	...	...	...	1	...	...	...	Also wound of hand; amputation of finger.

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-12	Hrs. 12-24	Dys. 1-3	Dys. 3-6	Dys. +6	Not stated.
LOCAL INJURIES—continued.																
<i>Lower extremity—</i>																
Fracture of shaft, lower third	12	2	3	3	2	2	1	...	...	3	14	...	...	...	...	...
„ through condyles into knee-joint	1	2	...	...	...	...	1	...	2	...	2	...	1	...	...	...
Fracture of patella . . .	16	7	...	...	1	5	9	3	3	2	19	1	2	...	1	...
Do., comminuted . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Old fracture of patella . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Fracture of tibia and fibula, simple—																
Upper third . . .	6	2	...	...	1	2	2	1	...	2	6	1	1	...	...	...
Do., comminuted . . .	...	2	...	...	...	...	...	...	1	1	2	...	...	...	...	...
Middle third . . .	11	2	...	4	3	...	3	1	1	1	13	...	...	...	...	...
Lower third . . .	48	18	1	3	9	11	15	16	4	7	60	3	3	...	...	...
Do., comminuted . . .	2	...	...	...	...	1	...	...	...	1	1	1	...	...	...	...
Compound fracture of tibia, simple fracture of fibula	1	2	...	1	...	1	...	1	...	...	3	...	...	...	...	...
Compound fracture of tibia and fibula	17	3	1	...	...	6	3	7	...	3	16	4	...	...	...	...
Simple fracture of tibia, compound fracture of fibula	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Ununited fracture of tibia and fibula	2	...	...	...	1	1	...	...	...	...	...	...	...	...	2	...
Simple fracture of tibia—																
Upper third . . .	1	1	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Middle third . . .	5	3	...	2	1	1	...	3	1	...	7	...	1	...	...	...
Lower third . . .	13	6	...	6	2	2	3	5	1	...	17	...	1	...	1	...
Compound of tibia . . .	2	1	...	...	...	3	...	...	...	...	3	...	...	...	...	...
Separation of lower epiphysis of tibia	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Do., compound . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Fracture of fibula, shaft—																
Upper third . . .	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Lower third . . .	15	1	...	1	2	3	5	3	2	...	15	...	1	...	...	...
Fracture of external malleolus	4	...	...	...	2	1	...	...	1	...	2	...	1	...	1	...
„ of tarsus (os calcis) . .	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Do., compound . . .	2	1	...	...	...	2	1	...	...	...	3	...	...	...	...	...
Comp. fracture of metatarsus .	1	1	...	1	1	...	...	...	...	...	2	...	...	...	...	...
Do., phalanges . . .	6	...	...	1	1	1	2	1	...	...	6	...	...	...	...	...

continued.

Duration of residence.								Result.				Remarks.
Dys 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
...	1	6	6	1	...	...	...	14	...	...	...	1 refracture.
...	...	...	3	...	...	...	...	3	...	...	...	
...	3	10	10	...	...	...	...	21	2	...	...	1 refracture.
...	...	...	1	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	Stiffness of knee; massage.
1	...	6	1	...	...	...	...	7	1	...	...	Also fracture of rib and dislocation of humerus 1.
...	...	...	2	...	...	...	...	1	1	...	...	
...	1	11	1	...	...	...	...	13	...	...	...	
3	5	52	4	1	...	...	...	64	1	...	1	Refracture 1.
...	1	1	...	...	...	...	...	1	...	...	1	Pericarditis, cystitis, and surgical kidney in fatal case.
...	...	2	1	...	...	...	...	3	...	...	...	Middle third 2; upper third 1 (comminuted).
4	...	2	9	4	...	1	...	16	...	...	4	Transferred for erysipelas 1 (necrosis); subcoracoid dislocation of humerus 1; amputation, primary, 3 (2 double amputations fatal); 7 comminuted. Situation of fracture: upper third 2, middle 3, lower 13.
...	...	...	1	...	...	...	...	1	...	...	...	Traumatic aneurysm on 6th day, cured by compression. See 'Lancet,' vol. i, 1890.
...	...	...	...	1	1	...	...	...	1	1	...	Resection and wire suture 1 (relieved).
...	...	2	...	...	...	...	...	2	...	...	...	
...	2	6	...	...	...	...	...	7	...	...	1	Fatal case, delirium tremens. 1 comminuted.
3	3	12	...	1	...	...	...	18	1	...	...	
...	1	...	1	...	...	1	...	3	...	...	...	Upper third 1; middle 1; lower third 1. Acute necrosis, sequestrotomy 1.
...	1	...	...	...	...	...	...	1	...	...	...	Fall, knocked down; age 10.
...	...	...	...	1	...	...	...	1	...	...	...	Foot caught in wheels of chaff-cutting machine; age 15. Free movement in joint on discharge.
...	1	...	...	...	...	...	...	1	...	...	...	
3	9	4	...	...	...	...	...	16	...	...	...	
3	1	...	...	...	...	...	...	4	...	...	...	
...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	2	...	...	...	...	3	...	...	...	Amputation upper third of leg 1; "Syme" 1; subastragalar 1.
1	...	...	1	...	...	...	...	1	...	...	1	"Chopart's" amputation 1; "Hey's" ditto 1.
1	...	3	2	...	...	...	...	6	...	...	...	Amputation of toes 3; antiseptic bath 3.

continued.

Duration of residence.								Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-12	Mts. +12	C.	R.	U.	D.	
...	...	...	...	...	2	...	...	1	...	...	1	Compound fracture of right femur and simple fracture of left fibula 1; simple fracture of left femur, compound fracture of right tibia and fibula 1 (amputation of leg, death from cystitis and suppurative nephritis).
...	1	...	1	...	1	...	...	3	...	...	...	1 transferred for erysipelas.
...	1	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	Discharged at own request.
1	4	6	1	...	...	...	...	9	3	...	...	
...	2	1	...	...	...	...	...	3	...	...	...	
...	...	1	1	...	...	...	...	2	...	...	...	
...	...	...	...	...	1	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	664	41	9	79	
								793				
...	...	...	...	...	...	...	...	906	321	126	82	
								1435				
...	...	...	...	...	...	...	...	122	127	26	0	
								275				
								2503				

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
REMOVAL OF TUMOURS AND NEW GROWTHS.											
For carcinoma of breast	...	10	...	...	...	...	...	3	3	4	
Ditto with removal of glands	...	22	...	...	...	...	4	8	6	4	
Removal of recurrent growth	...	5	...	...	...	...	...	3	1	1	
Malignant disease of cæcum—											
Excision, with artificial anus	1	...	...	...	...	1	...	...	...	...	
Malignant disease of rectum—											
Excision	1	2	...	...	...	...	...	...	2	1	
Partial excision	...	1	...	...	...	...	...	...	...	1	
Excision + enterorrhaphy	...	1	...	...	...	...	...	1	...	...	
For epithelioma of face	1	...	...	...	...	...	...	...	...	1	
" " (recurrent)	4	...	...	...	...	...	3	...	1	...	
" cheek	3	...	...	...	...	...	...	...	3	...	
" lip	3	...	...	...	...	...	1	...	2	...	
" " (recurrent)	2	...	...	...	...	...	...	2	...	...	
" tongue, excision	16	4	...	...	...	2	...	2	8	8	
" palate	1	...	...	...	...	...	...	...	1	...	
" floor of mouth	3	...	...	...	...	...	...	1	1	1	
" " (recurrent)	4	...	...	...	...	...	...	1	3	...	
" glands of neck	5	1	...	...	...	1	...	2	2	1	
" scalp	...	1	...	...	...	...	...	...	...	1	
" forearm	...	1	...	...	...	...	...	...	1	...	
" rodent ulcer	2	2	...	...	...	...	...	3	1	...	
" sarcoma of skin	2	...	...	...	...	...	...	2	...	...	
" superior maxilla	2	2	...	...	...	2	1	...	...	1	
" inferior maxilla	2	...	...	...	...	...	...	2	...	...	
" breast	...	3	...	...	...	...	...	3	...	...	
" testis	1	...	...	...	...	...	1	...	...	...	
" pectoralis major (recurrent)	1	...	1	...	...	...	...	...	...	...	
" sternum	...	1	...	...	...	...	1	...	...	...	
" thigh	2	...	...	...	...	1	1	...	...	...	
" adenoma of breast	...	6	...	...	...	4	2	...	...	...	
" papilloma	2	2	...	...	1	2	...	...	...	1	
" urethral caruncle	...	2	...	...	...	...	...	...	1	1	
" congenital mole	...	1	...	1	...	...	...	...	...	...	
" lymphoma	3	...	...	...	1	...	...	2	...	...	
" angioma, excision	...	2	...	...	2	...	...	...	...	...	
" incision and ligature	...	1	...	...	1	...	...	...	...	...	
" nævus	2	3	5	...	...	...	...	...	...	...	
" neuroma	1	...	...	...	...	...	...	...	1	...	
" exostosis	2	4	...	1	2	2	...	1	...	...	

Surgical Operations.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	1	8	1	...	...	...	...	...	10	...	...	...	...	Erysipelas 1. For removal of sarcoma, see below. For fatal cases, see Special Summary. Recurrence in breast 4; in axillary glands 1.
2	...	9	11	...	...	...	...	...	17	1	...	4	...	
...	1	5	...	...	...	...	...	...	5	...	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	...	Subsequent operation for restoring continuity of bowel proved fatal.
...	...	2	...	1	...	...	...	...	2	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Removal of polypus and portion of adjacent new growth.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Removal of tongue and glands 1; preliminary ligature of lingual artery 3; preliminary trache- otomy 2 (1 fatal from pneumonia); removal of part of lower jaw 1. 3 unfit for operation. For fatal cases, see Special Summary.
...	...	3	1	...	...	...	...	...	1	3	...	...	...	
...	1	1	1	...	...	...	...	...	1	2	...	...	...	
...	1	1	1	...	...	...	...	...	3	...	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	
1	1	12	6	...	...	...	...	...	15	2	...	3	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	2	...	...	...	...	...	3	...	...	...	...	
1	1	...	2	...	...	...	...	...	3	1	...	...	...	
...	3	3	...	...	...	...	...	...	4	2	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Secondary to epithelioma of lip 1; of tongue 5. 1 recurrent. Excision 2; partial do. 2. Fatal case: hypostatic pneumonia. Removal of affected half of jaw in both. 2 recurrent; 1 adeno-sarcoma. 1 Death from secondary growth in viscera. Readmitted in 1890.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	1	1	2	...	...	...	...	...	4	...	...	...	...	
...	1	1	...	...	...	...	...	...	1	1	...	...	...	
...	1	3	...	...	...	...	...	...	4	...	...	...	...	
1	...	1	...	...	...	...	...	...	1	...	...	1	...	
...	...	2	1	...	...	...	...	...	2	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	1	...	...	...	...	...	1	...	...	...	...	
...	4	2	...	...	...	...	...	...	2	...	...	...	...	
1	2	1	...	...	...	...	...	...	4	...	...	...	...	Measles 1.
...	...	1	1	...	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Inguinal glands 1; tonsil 2.
...	...	1	2	...	...	...	...	...	1	2	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	2	2	1	...	...	...	...	...	5	...	...	...	...	
...	...	...	...	...	...	...	...	...	1	...	...	...	...	
2	2	2	...	...	...	...	...	...	6	...	...	...	...	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
REMOVAL OF TUMOURS AND NEW GROWTHS											
—continued.											
For parotid tumour	1	...	...	...	...	...	1	...	...	...	
„ fibromyoma uteri (hysterectomy)	...	1	...	...	...	...	...	1	...	...	
„ myxo-fibromyoma uteri	...	1	...	...	...	...	...	1	...	...	
„ epulis	1	2	...	1	1	...	...	1	...	...	
„ fibroma	2	2	...	...	...	2	1	1	...	...	
„ keloid	2	...	...	...	...	1	...	...	...	1	
„ lipoma	5	5	...	...	1	2	...	4	1	2	
„ myxoma	1	...	...	...	...	...	...	1	...	...	
„ mucous polypus (nose)	2	2	...	...	...	2	...	...	2	...	
„ naso-orbital tumour	1	...	...	...	...	1	...	...	...	...	
„ mylohyoid cyst	1	...	...	...	...	1	...	...	...	...	
„ cyst of neck	1	1	...	1	...	1	...	...	...	...	
„ sebaceous cyst	2	5	...	...	...	1	3	1	...	2	
„ cyst of breast	...	4	...	...	...	...	...	4	...	...	
„ ovarian tumour	...	7	...	...	...	1	3	2	...	1	
„ abdominal hydatid cyst	...	1	...	...	...	...	1	...	...	...	
NERVOUS SYSTEM.											
Resection and suture of nerve	2	...	...	...	...	1	1	...	...	...	
Liberation of nerve involved in cicatrix	1	...	...	...	...	...	...	...	1	...	
Nerve stretching	1	...	...	...	...	...	...	...	1	...	
Suture of wounded nerves	1	1	...	...	2	...	...	...	...	...	
CIRCULATORY SYSTEM.											
Excision of radial aneurysm	1	...	...	...	...	...	1	...	...	...	
„ ulnar aneurysm	1	...	...	...	...	...	...	1	...	...	
Ligature of external iliac artery	1	...	...	...	...	1	...	...	...	...	
„ superficial femoral artery	2	...	...	1	...	...	1	...	...	...	
„ sciatic artery	1	...	...	...	...	...	...	1	...	...	
„ brachial artery	2	...	2	...	...	...	...	...	...	...	
„ radial artery	...	3	...	...	...	2	1	...	...	...	
„ radial and ulnar artery	...	1	...	...	...	1	...	...	...	...	
Incision of old aneurysmal sac (popliteal)	1	...	...	...	...	1	...	...	...	...	
Excision of varicose veins	8	3	...	...	...	10	1	...	...	...	
LYMPHATIC SYSTEM.											
Excision of tuberculous glands	8	5	...	...	6	6	1	...	...	...	
RESPIRATORY SYSTEM.											
Tracheotomy	3	2	2	...	1	...	2	...	...	...	
Laryngotomy	1	...	...	...	...	...	...	1	...	...	

continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...	1
1	...	...	...	...	...	...	...	...	...	...	...	...	1
2	1	...	...	...	...	...	...	...	3	...	...	...	...
...	2	2	...	...	...	...	...	...	4	...	...	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...	...
...	5	5	...	...	...	...	...	...	10	...	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	Of neck.
3	1	...	...	...	...	...	...	...	4	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Recurrent.
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	2	...	...	...	...	...	...	...	2	...	...	...	Dermoid.
1	4	2	...	...	...	...	...	...	7	...	...	...	...
...	1	2	1	...	...	...	...	...	4	...	...	...	...
...	...	6	1	...	...	...	...	...	7	...	...	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...	Incision through abdominal wall.
...	...	1	1	...	...	...	...	...	1	1	...	...	Resection of "traumatic neuroma."
...	...	...	1	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	Old excision of Meckel's ganglion (1886).
...	...	2	...	...	...	...	...	...	2	...	...	...	Median 1; ulnar 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	} Traumatic.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	For aneurysm of common femoral.
...	...	...	2	...	...	...	...	...	2	...	...	...	For popliteal aneurysm 1; wound of femoral artery and vein 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	For traumatic aneurysm (diffuse).
...	...	...	1	1	...	...	...	...	2	...	...	...	Wound 1; compound separation of epiphysis 1.
...	3	...	...	...	...	...	...	...	3	...	...	...	Suture of tendons also.
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	...	...	...	...	1	...	...	...	1	...	...	...	Evacuation of contents. See 'Lancet,' April, 1890.
...	...	7	4	...	...	...	...	...	10	...	...	1	Pyæmia in fatal case.
...	10	1	2	...	...	...	...	...	10	...	3	...	...
2	2	1	...	...	...	...	...	...	2	1	...	2	Malignant disease of neck 1; of larynx 1; scald of throat 2 (intubation attempted in 1); for removal of foreign body 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	Malignant disease of jaw and pharynx.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
DUCTLESS GLANDS—THYROID.										
Partial excision	1	2	...	...	...	2	...	1	...	...
DIGESTIVE SYSTEM.										
Gastrostomy	...	1	...	...	...	...	...	1	...	...
Radical cure of hernia	18	2	3	...	9	4	3	1	...	...
For strangulated inguinal hernia	20	2	4	...	2	5	4	2	3	...
" femoral hernia	4	17	...	...	...	...	4	...	7	10
" umbilical hernia	1	1	...	...	...	...	1	...	...	1
Excision of old thickened hernial sac	1	...	...	...	...	...	...	...	1	...
Abdominal section	5	4	...	...	2	1	1	3	1	1
Enterorrhaphy	4	1	...	...	1	1	1	2	...	...
Colotomy, lumbar	1	2	...	...	...	...	...	...	2	1
" inguinal	...	2	...	...	...	1	...	...	...	1
Removal of vermiform appendix	1	...	...	...	...	...	...	...	...	1
For hæmorrhoids	2	...	...	...	...	...	2	...	...	...
" " ligature and removal	9	6	...	...	1	3	6	2	1	2
" " excision + suture	2	1	...	...	...	...	...	3	...	...
" " clamp and cautery	1	1	...	...	...	1	...	...	...	1
" rectal stricture	...	1	...	...	...	...	1	...	...	...
" fistula in ano	22	...	...	...	...	7	11	2	2	...
GENITO-URINARY SYSTEM.										
For phimosis	6	...	4	...	...	1	...	...	1	...
" hydrocele, tapping	1	...	...	...	...	...	1	...	...	...
" " " + injection	5	...	...	...	1	1	2	...	...	1
" " radical cure	4	...	...	...	1	...	1	1	1	...
" varicocele	18	...	...	...	8	9	1	...	...	...
" hæmatocele	1	...	...	...	...	...	...	1	...	...
Castration	4	...	1	...	...	1	1	1	...	...
Removal of warts (venereal)	1	2	...	...	1	2	...	...	...	...

continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	2	...	1	...	...	...	...	...	3	...	...	...	...	Removal right half of gland 3 (2 cystic); temporary paralysis of right vocal cord after operation 1.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Old case of HCl poisoning.
...	1	14	5	...	...	...	...	...	20	...	...	...	...	Congenital, with misplaced testis 4; umbilical 1 (male); femoral 1 (female); rest inguinal. Varicocele in 1; strangulated hernia on opposite side in 1.
5	1	6	6	3	...	...	...	...	15	1	...	...	6	Perforation of bowel 1 (relieved, with artificial anus; died after subsequent operation to restore continuity of bowel).
3	2	12	4	...	...	...	...	...	18	...	...	...	3	
1	...	1	...	...	...	...	...	...	1	...	...	...	1	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
3	1	2	3	...	...	...	...	...	4	1	...	...	4	Exploratory 4 (for ascites 1, for bullet wound 1, for internal malignant disease 1, for intestinal obstruction 1); for suppurative peritonitis 3; simple do. 1 (1 tubercular, 1 perforative, 1 cause doubtful, with intestinal obstruction); for ruptured uterus 1.
4	...	...	1	...	...	...	...	...	1	...	...	...	4	See Special Summary. 1 traumatic rupture of small intestine, cured.
...	...	...	3	...	...	...	...	...	3	...	...	...	...	For malignant disease of rectum; "cured" as far as operation is concerned.
...	...	...	1	...	1	...	...	...	...	1	...	...	1	Fatal case died after operation for resection and subsequent enterorrhaphy.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Adherent in old hernial sac, perforation and sup- puration having occurred.
...	1	1	...	...	...	...	...	...	1	...	...	...	...	
1	6	7	1	...	...	...	...	...	15	...	...	...	...	
...	1	2	...	...	...	...	...	...	3	...	...	...	...	"Whitehead's operation."
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Incision and dilatation.
1	4	12	4	1	...	...	...	...	19	2	1	...	...	Facial paralysis, paraplegia, phthisis in 1; tubercular disease of sternum 1; commencing phthisis 1.
...	5	1	...	...	...	...	...	...	6	...	...	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	
1	4	...	...	...	...	...	...	...	4	1	...	...	...	
...	...	2	2	...	...	...	...	...	4	...	...	...	...	1 congenital, with partial descent of testis.
...	1	13	3	1	...	...	...	...	18	...	...	...	...	Excision of veins 17; removal of portion of scro- tum (to cause contraction) 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Incision, evacuation, suture of sac-wall to skin.
...	...	1	2	...	1	...	...	...	3	1	...	...	...	Tuberculous testis 2; gummatous do. 1; cystic do. 1.
1	2	...	...	...	...	...	...	...	2	1	...	...	...	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
GENITO-URINARY SYSTEM—continued.										
Removal of lupus of vulva	...	1	...	...	...	...	1	...	...	...
" hypertrophy of vulva	...	1	...	...	...	...	1	...	...	...
For ruptured perineum	...	1	...	...	...	1	...	...	...	...
Amputation for chronic interstitial mastitis	...	1	...	...	...	...	...	1	...	...
" of penis	1	...	...	...	...	...	...	1	...	...
External urethrotomy	6	...	...	...	1	...	4	...	...	1
Internal urethrotomy	5	...	...	...	...	3	...	2	...	...
Perineal section	5	...	...	...	...	...	...	3	...	2
" puncture	3	...	...	...	1	...	...	1	1	...
Forcible dilatation of stricture	1	...	...	...	...	1	...	...	...	...
For vesico-vaginal fistula	...	2	...	...	...	1	1	...	...	...
Supra-pubic cystotomy	8	1	...	...	1	1	...	1	3	3
" lithotomy	1	...	...	...	1	...	...	...	...	...
Lateral lithotomy	2	...	...	1	...	...	1	...	...	...
Nephrotomy	2	...	...	...	...	1	1	...	...	...
Nephrectomy	1	2	...	...	...	...	3	...	...	...
Aspiration of hydronephrosis	1	...	...	1	...	...	...	...	...	...
LOCOMOTORY SYSTEM.										
Removal of necrosed bone from—										
Dorsal vertebrae	1	...	1	...	...	...	...	...	...	...
Superior maxilla	...	1	...	1	...	...	...	...	...	...
Inferior maxilla	3	1	...	3	...	1	...	...	...	...
Scapula	...	1	...	1	...	...	...	...	...	...
Clavicle	1	...	...	...	1	...	...	...	...	...
Humerus	1	...	...	...	...	...	1	...	...	...
Radius	1	...	1	...	...	...	...	...	...	...
Finger	1	...	1	...	...	1	...	...	...	...
Femur	3	1	...	...	2	1	...	1	...	...
Tibia	11	...	...	...	7	1	2	1	...	...
Toe	1	...	...	...	...	...	...	...	...	1
Scraping for caries of—										
Malar bone	1	...	...	...	...	...	...	1	...	...
Sternum	1	...	...	...	...	...	...	...	1	...
Clavicle	1	...	...	...	...	1	...	...	...	...
Ilium	...	2	...	...	...	2	...	...	...	...
Femur	...	2	...	...	1	1	...	...	...	...
Tibia	1	1	...	1	1	...	...	...	...	...
Metatarsus	2	...	1	...	1	...	...	...	...	...
Tarsus	2	1	...	...	2	...	...	...	1	...
Trephining for caries of sternum	...	1	...	...	1	...	...	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	For incontinence of urine.
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	? Papilloma or epithelioma.
...	...	1	4	1	...	...	...	...	5	1	...	...	
...	2	3	...	...	...	...	...	...	4	1	...	...	
...	...	1	3	...	2	...	...	...	2	...	3	...	Extravasation of urine 4; tubercle of bladder 1.
...	...	...	1	2	...	...	...	...	2	...	1	...	Malignant disease of bladder 1; prostaticitis and retention 1; rupture of urethra 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	1	...	...	...	...	1	...	1	...	Fatal case: syncope during operation (ether).
1	1	2	4	1	...	...	...	...	3	2	...	4	Malignant disease of rectum and bladder 1; of bladder 1; retention and chronic cystitis 2; enlarged prostate 3; tubercular of bladder, &c., 2.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	2	...	...	...	...	...	1	1	...	...	Previous lateral lithotomy in 1, with urinary fistula.
...	...	...	...	2	...	...	...	...	...	2	...	...	
1	...	...	2	...	...	...	...	...	1	...	2	...	For pyonephrosis 2; for calculous pyelitis 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	For caries necrotica; removal of part of laminae.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	3	...	1	...	...	...	...	...	3	1	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	Trephining.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Acute necrosis after simple fracture.
...	...	1	...	...	...	...	...	...	1	...	...	...	Quiet necrosis.
...	...	...	1	2	...	1	...	...	2	2	...	...	Trephining.
...	...	2	5	1	1	...	2	...	9	2	...	...	
...	...	...	...	1	...	...	...	...	...	...	1	...	Subsequent amputation (1) of toe, (2) of foot; subastragalar.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Syphilitic.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	1	...	...	2	...	...	...	Apparent disease of sacro-iliac joint in 1.
...	...	...	1	...	1	...	...	...	1	1	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	
...	...	1	1	...	...	...	...	...	...	2	...	...	
...	...	1	2	...	...	...	...	...	...	3	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
LOCOMOTORY SYSTEM—continued.											
Trephining for caries of femur . . .	1	1	...	...	...	1	1	...	...	...	
" fibula . . .	...	1	...	...	...	1	...	...	...	...	
Subperiosteal resection of os calcis . . .	...	1	...	1	...	...	...	...	...	...	
" first metatarsal . . .	1	...	1	...	...	...	...	...	...	...	
Excision of shoulder-joint . . .	...	1	...	1	...	...	...	...	...	...	
" elbow-joint . . .	1	2	...	...	...	3	...	...	...	...	
" metacarpo-phalangeal-joint . . .	1	...	...	...	...	1	...	...	...	...	
" hip-joint . . .	11	6	3	10	...	4	...	...	...	...	
" knee-joint . . .	2	2	...	...	1	1	1	1	...	...	
" astragalo-scapoid-joint . . .	3	..	...	...	1	2	...	...	...	...	
" interphalangeal joint of toe . . .	3	1	...	1	1	2	...	...	...	...	
Arthrotomy of hip . . .	1	...	1	...	...	...	...	...	...	...	
" knee . . .	1	1	...	...	1	1	...	...	...	...	
Arthrectomy, shoulder-joint . . .	2	...	...	...	1	...	...	1	...	...	
" elbow-joint . . .	...	4	3	...	1	...	...	...	...	...	
" knee . . .	8	5	2	4	1	5	1	...	...	...	
" ankle . . .	3	2	1	1	2	...	1	...	...	...	
Removal of loose body in knee-joint . . .	3	...	...	...	1	1	...	1	...	...	
Suture of loose cartilage in knee-joint . . .	1	...	...	...	...	1	...	...	...	...	
Excision of enlarged bursa . . .	2	7	...	...	4	1	3	...	...	...	
Aspiration of enlarged bursa . . .	1	1	...	...	1	...	1	...	...	...	
Excision of ganglion of foot . . .	1	...	...	...	...	...	...	...	1	...	
Removal of tuberculous growth in tendon sheath . . .	1	...	...	...	1	...	...	...	...	...	
Plastic operation for elongation of contracted flexors of wrist . . .	...	1	...	...	1	...	...	...	...	...	
Tenotomy for torticollis . . .	2	3	...	3	2	...	...	...	...	...	
" talipes . . .	19	3	3	6	10	1	...	1	1	...	
" contracted finger . . .	...	2	...	...	1	1	...	...	...	...	
Reparative operations . . .	1	...	...	1	...	...	...	...	...	...	
Cleft palate . . .	3	5	...	2	6	...	...	...	...	...	
Harelip . . .	5	3	7	...	1	...	...	...	...	...	
Removal of premaxilla . . .	1	...	1	...	...	...	...	...	...	...	
Plastic operation for—											
Cicatricial deformity of eyelid . . .	2	4	1	2	2	...	1	...	...	...	
" face . . .	1	1	...	1	...	1	...	...	...	...	
" arm . . .	...	1	...	...	1	...	...	...	...	...	
" finger . . .	1	1	1	...	1	...	...	...	...	...	
" congenital webbed fingers . . .	...	1	...	...	1	...	...	...	...	...	
" deformity of penis . . .	2	...	1	1	...	...	...	...	...	...	
Removal of branchial cyst . . .	1	...	...	...	1	...	...	...	...	...	

continued.

Duration of residence after operation.									Result.				Remarks.
ys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
..	..	..	1	1	..	..	..	..	2	..	..	..	Excision of hip subsequently 1.
..	..	1	..	..	..	..	..	..	1	..	..	..	
..	..	..	..	1	..	..	..	..	1	..	..	..	} Acute necrosis.
..	..	..	..	..	1	..	..	..	1	..	..	..	
..	..	..	1	..	..	..	..	..	1	..	..	..	Tubercular disease.
..	..	1	1	1	..	..	..	..	2	1	..	..	Subsequent amputation of arm 1.
..	..	1	..	..	..	..	..	..	1	..	..	..	Of thumb.
..	..	1	2	5	3	5	1	..	8	7	..	2	Fatal cases: lardaceous disease 1; shock after a subsequent amputation at hip-joint 1. 1 double excision.
..	..	..	1	2	1	..	..	..	4	..	..	..	
..	..	..	..	1	..	2	..	..	3	..	..	..	"Tarsectomy" for flat foot; double operation in 2.
..	1	2	1	..	..	..	..	..	4	..	..	..	For hammer-toe.
..	..	1	..	..	..	..	..	..	..	..	..	1	Acute necrosis of femur, acute arthritis of hip. See "Acute bone cases" in Special Summary, "Pyæmia."
..	..	1	..	1	..	..	..	..	2	..	..	..	For supposed loose body 1 (none found); for wound of joint 1.
..	..	..	1	1	..	..	..	..	2	..	..	..	} For tubercular disease.
..	..	3	1	..	..	..	..	..	3	1	..	..	
..	..	..	4	6	2	..	..	..	8	4	..	..	2 developed scarlatina after operation.
..	..	1	1	2	1	..	..	..	4	1	..	..	
..	..	1	1	..	1	..	..	..	3	..	..	..	
..	..	..	..	1	..	..	..	..	1	..	..	..	
..	5	4	..	..	..	..	..	..	9	..	..	..	Supra-spinatus bursa 1; patellar popliteal space 1.
1	..	1	..	..	..	..	..	..	1	1	..	..	
1	..	..	..	..	..	..	..	..	1	..	..	..	
..	1	..	..	..	..	..	..	..	1	..	..	..	5th digit of hand.
..	..	1	..	..	..	..	..	..	1	..	..	..	
..	1	2	2	..	..	..	..	..	5	..	..	..	
3	4	9	3	3	..	..	..	..	16	5	1	..	
..	..	1	..	1	..	..	..	..	..	2	..	..	
..	..	1	..	..	..	..	..	..	1	..	..	..	
..	..	6	1	1	..	..	..	..	5	3	..	..	1 transferred for scarlatina 15 days after operation.
..	3	5	..	..	..	..	..	..	6	1	1	..	5 single, 3 double harelip.
..	..	..	1	..	..	..	..	..	..	..	1	..	Died on day after discharge; marasmus.
..	..	4	1	1	..	..	..	..	3	3	..	..	3 successive operations in 1.
..	..	..	1	..	..	1	..	..	1	1	..	..	
..	..	..	1	..	..	..	..	..	1	..	..	..	
..	..	..	1	1	..	..	..	..	1	1	..	..	
..	..	..	1	..	..	..	..	..	1	..	..	..	
..	..	1	1	..	..	..	..	..	2	..	..	..	Epispadias 1; "congenital chordee" 1.
..	1	..	..	..	..	..	..	..	1	..	..	..	

TABLE III.—

[illegible]

continued.

Duration of residence after operation.									Result.				Remarks.
ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
4-5-13		2-4	1-2	2-4	4-6	6-9	9-12	+12					
..	..	..	..	2	..	..	..	..	..	1	1	..	Temporary paresis of lower extremities in 1.
1	..	..	..	..	..	..	..	..	..	..	..	1	
..	..	1	..	..	..	..	..	..	..	1	..	..	Removal of traumatic exostosis.
..	..	..	..	1	..	..	..	..	..	1	..	..	Resection of portion of femur.
..	..	..	8	7	..	..	..	..	14	1	..	..	For ankylosis of hip 2; for genu valgum 12; for genu varum 1.
..	..	..	..	..	1	..	..	..	1	..	..	..	For hallux flexus.
..	..	..	..	1	..	..	..	..	1	..	..	..	See 'Med. Soc. Trans.,' 1889.
..	..	..	..	2	..	..	..	..	1	..	1	..	Wire suture 1, cured; kangaroo tendon 1, failed.
..	..	..	..	1	..	..	..	..	..	1	..	..	
..	1	4	..	..	..	..	..	..	4	1	..	..	
..	..	..	..	1	..	..	..	..	1	..	..	..	Compound fracture and rupture of axillary vein.
..	..	3	2	..	..	..	..	..	5	..	..	..	1 double amputation (opposite forearm).
..	..	1	..	..	..	..	..	..	1	..	..	..	
1	2	6	2	..	..	..	..	..	11	..	..	..	
..	..	..	..	1	..	..	..	..	1	..	..	..	Acute spreading traumatic gangrene after compound dislocation of tibia and fibula.
2	..	1	..	1	..	..	..	..	1	..	3	..	1 double amputation, both legs.
..	..	..	1	..	..	..	..	..	1	..	..	..	
..	..	1	..	..	..	..	..	..	1	..	..	..	
1	..	..	..	..	..	..	..	..	..	..	..	1	
..	..	..	1	..	..	..	..	..	1	..	..	..	
1	..	1	1	..	..	..	..	..	3	..	..	..	
..	..	..	1	..	..	..	..	..	1	..	..	..	Peripheral sarcoma.
1	..	..	..	..	..	..	..	..	..	..	1	..	Splinter in thumb. See tetanus cases.
..	1	2	..	..	..	..	..	..	3	..	..	..	
..	1	..	..	..	..	..	..	..	..	..	1	..	For gangrene of foot and leg.
..	..	..	3	2	..	..	..	..	5	..	..	..	Acute necrosis 1; gangrene of foot 1; myeloid sarcoma of tibia 1; tuberculous knee 2.
..	..	..	1	..	..	..	..	..	1	..	..	..	For chronic osteitis of tibia.
1	..	..	..	..	..	..	..	..	..	..	1	..	Sarcoma of fibula; death from acute septicæmia.
..	..	1	3	..	..	1	1	..	6	..	..	..	5 for tubercular disease of tarsus (excision of hip on opposite side in 1, previous arthrectomy of ankle 1); 1 for suppurative cellulitis.
1	..	..	..	..	..	..	..	..	..	..	..	1	

continued.

Duration of residence after operation.									Result.				Remarks.
ns.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
2	...	...	3	...	...	...	...	...	3	...	...	2	Exploratory 1; for fracture 4.
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	...	...	...	...	...	...	...	...	1	...	...	
1	4	1	...	...	...	...	...	...	6	...	...	...	
2	2	4	1	...	...	...	...	...	4	5	...	...	
3	6	...	...	...	...	...	...	...	8	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	1	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	Ulcers after burns.
1	2	2	...	1	...	...	...	...	6	...	...	...	Manipulation under anaesthesia 1; fracture anat. neck of humerus 1; fracture of fibula 2.
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	Metacarpo-phalangeal joint; reduction after tenotomy.
...	...	1	...	...	...	...	...	...	...	1	...	...	
1	...	1	...	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	598	103	6	62	
11	8	7	3	...	...	...	...	...	17	...	...	56	
...	1	...	...	...	...	...	...	...	1	...	...	...	
									616	103	6	118	
									843				

SPECIAL SUMMARY.

GENERAL DISEASES.

ERYSIPELAS (admitted as such).

For cases arising in hospital see Special Table I.

Males 37, females 15. C. 44, R. 2, D. 6.

Situation.—Head and face 18; neck 2; upper extremity 7; trunk 4; lower extremity 18; not stated 2.

Causes.—Wounds: incised 4, lacerated 2, contused 9; burn 5; scald 1; abscesses: face 1, neck 2, axilla 1, abdominal wall 1; ulcer 4; sinus 2; suppurating corn 1; suppurating bursa patellæ 2; needle in thumb 1; contusion 1; simple fracture 2; vaccination 1.

6 entered as cellulo-cutaneous erysipelas (4 fatal).

Relapses occurred in 5 (twice in 1 case). Frequent previous attacks in 4.

Fatal cases.

1. Male, æt. 65. Ill 3 weeks. Gradual onset and extension upwards, starting from small sore on foot. Kept at his work till 3 days before admission, when whole leg, thigh, and lower abdomen swollen with brawny mottled induration, with bullæ. Incisions. Death from exhaustion on 4th day.

2. Male, æt. 48. Previous attack of erysipelas in leg 3 weeks before admission. No history of injury. On admission, cellulo-cutaneous erysipelas of leg, with extensive sloughing of subcutaneous tissues. Temporary improvement after incision, followed by gradual failure from exhaustion. Death on 47th day.

3. Male, æt. 45. Wound (contused) over knee some weeks back. Two weeks red and swollen. Cellulo-cutaneous erysipelas of left leg between ankle and knee. Suppuration. Incisions. Death from exhaustion on 5th day.

4. Male, æt. 60. Injury to head 11 years ago; liable to occasional attacks of erysipelas of head since. No known cause for present attack. Cellulo-cutaneous erysipelas of face and scalp. Suppuration. Incision. Temperature gradually rose from 99° up to 103·6°. Death (coma) on 4th day.

5. Female, æt. 29. In Charity Ward 8 years ago for pleurisy with effusion and angular spinal curvature. Two years later readmitted, Sayre's jacket applied. 4 months before admission abscess pointed on posterior aspect of thigh, and

burst spontaneously 6 days before admission. Erysipelas appeared around, with febrile symptoms. On admission, cellulitis of thigh, albuminuria. Temperature 99°—103°. Death on 16th day. P.M.—Psoas abscess (communicating with sinus in thigh), caries of lumbar vertebræ; acute nephritis; intra-abdominal hydatids attached to liver.

6. Female, æt. 6 weeks. Duration 1 week before admission. No known cause. Cutaneous rosy rash general over body, extending in successive exacerbations from hypogastrium upwards to head. Death on 11th day in convulsions.

PYÆMIA.

(See Special Table II.)

SYPHILIS.

Selected cases. Congenital.

Male, æt. 8 months. Evidence of syphilis in father. Vaccinated at 2 months; 5 places on left arm. On admission, 5 deep excavated ulcers with partially adherent black scabs; surrounding skin red and indurated; erythematous rash on buttocks; child very ill, emaciated, and weak. Hyd. c. Cret., gr. 1, om. noct. Ulcers poulticed (cataplasma Sodæ Chlor.) and later dressed with Sod. Chlor. lotion; within 3 weeks ulcers healed; child much stouter; rash disappeared.

Phagedænic ulceration in groin.—Three female infants, ages 15, 15, and 17 months. History of measles in all three, pertussis also in 1, no other history of illness; 1 died suddenly 6th day. P.M.—Abscess in subperitoneal cellular tissue; 1 from exhaustion on 19th day. 1 recovered.

TETANUS.

Males 5, female 1. C. 3, D. 3.

1. Male, æt. 13. Three weeks before admission three fingers crushed in machine. Five days before admission sudden spasm of pain in back with opisthotonos while at breakfast; several similar attacks during the day. Next day, stiffness of neck. Third day stayed in bed, spasms more frequent and more intense, and causing rigidity of abdominal wall. Very thirsty, able to swallow liquids well with relief to symptoms; took no solid food. Fourth day of onset stiffness of jaw, but swallowing not interfered with. Constipation marked since onset of illness. Perspiration after spasms. Spasms of varying intensity and frequency occurred during first 2 weeks, especially excited by touching wounded finger, in spite of administration of chloral and ammonium bromide. Third week, spasms much less frequent and less severe; ceased on 21st day. Cessation of chloral treatment on 23rd day caused slight return of spasms; chloral treatment resumed for a few days. Discharged cured on 53rd day. (No active interference with wounded fingers, only small superficial ulcer on one finger present on admission, other wounds healed.)

2. Male, æt. 24. 17 days before admission crushed finger between iron pipes

nail blackened and became detached. Five days before admission felt stiffness in muscles of jaw when at breakfast; next day worse; 3rd day an attack of opisthotonos; noticed that hot fomentations to cheek and swallowing hot liquids increased rigidity; 5th day admitted. General tonic rigidity of all muscles, except of forearms and eyeballs. Occasional sudden spasms, especially excited by touching wounded finger; severe epigastric pain; perspiration profuse generally; retention of urine, requiring catheter (which caused no spasms); treated with chloral hydrate, pot. bromide, and morphia injections, which caused cessation of spasms, but appeared to give rise to subacute delirium, and to a papulovesicular rash which came on during 2nd week; passive rigidity, especially of trunk muscles, continued for three or four weeks; but all symptoms gradually subsided, so that on 30th day he was removed into the large ward, slight rigidity of abdominal muscles alone remaining; discharged cured on 48th day.

3. Male, *æt.* 11. Fell from a tree (26 feet) 5 days before admission. Concussion. No severe symptoms. No sign of fracture of skull or other obvious organic injury. Two days later stiffness of jaw. On admission, stiffness and occasional spasms of neck muscles, especially sterno-mastoids, treated with chloral hydrate. Occasional slight spasm, with persistent rigidity in neck and abdominal muscles for 7 days, then spasms ceased; slight rigidity still remained for about 10 days. No further symptoms. Discharged cured on 43rd day.

Fatal cases.

1. Male, *æt.* 13. Fourteen days before admission wounded ball of great toe by nail in boot; 12 days later, stiffness of muscles of mastication. On 2nd day from onset admitted with rigidity of neck and facial muscles, which gradually extended to trunk; perspiration profuse; retention of urine (passage of catheter caused spasm); wound opened up; suppurating track in foot; no nerve seen; no tenderness along posterior tibial nerve. Spasms became more and more frequent in spite of chloral and cocain injections; feeding by nasal tube and enemata, food refused by mouth. On 4th day chloroform watch commenced, and continued up to death on 5th day; spasms returning whenever it was relaxed. Temperature rose from normal to 103° on 4th day, when it fell to 99° — 100° , rising again on 5th day, reaching 103.4° at death. P.M.—No visible evidence of lesion in viscera.

2. Male, *æt.* 30. No history of accident. Bitten by dog 2 years ago. One day before admission had "sore throat" and stiffness of neck. On admission, rigidity of neck and abdomen; no difficulty in respiration; chloride and bromide administered, but tetanic spasms occurred later in the day during the 2nd of which death occurred, apparently from asphyxia. P.M.—Small extravasation over left parieto-occipital convolutions; congestion on floor of 4th ventricle. No visible sign of organic disease.

3. Female, *æt.* 6. Admitted with "pain in head," attributed to a fall on preceding day. On admission, rigidity of back; several sudden spasms of opisthotonos, one excited by administration of bromide of potash and chloral; $1\frac{1}{2}$ hours later neck and masticatory muscle became affected; spasms recurred in spite of administration of chloroform, during which a splinter was found under the thumb-nail with slight suppuration around (nothing was known of this by the parents). The thumb was amputated, and a splinter 1 inch in length found to pass under the nail and skin towards the 1st joint. No relief followed; death

occurred 16 hours after admission after repeated spasms of increasing severity. P.M.—No visible signs of any organic disease. Experiments at Brown Institution with portions of splinter removed were negative. Three rabbits died of acute septicæmia after inoculation (subarachnoid); cultivations negative.

LOCAL DISEASES.

TUMOURS.

Carcinoma of breast.—Females 37. C. 27, R. 2, U. 4, D. 4. Family history of cancer 5; of phthisis 4; both 3; of tumour (nature doubtful) 1. Attributed to blow 3; history of abscess in same breast 3; eczema of nipple 1; commencing during lactation 2 (in 1 at end of $2\frac{1}{2}$ years' suckling). Right breast only 21, left 14, both 2. 4 chronic atrophic (2 not operated upon); "colloid" 1; multiple foci of carcinoma 1; acute "miliary" dissemination in surrounding skin 1 (specimen in museum).

Fatal cases.

1. See Pyæmia Table, B. 3 (Special Table II).

2. *Æt.* 60. Mother died of cancer of uterus; opposite breast (left) removed 18 years previously for tumours. On admission small nodule near right nipple, noticed 12 months, adherent to skin and surrounding breast tissue; tumour and glands removed. Death on 3rd day. P.M.—Congestion and œdema of lungs; slight sign of recent pericarditis; calcified fibroids of uterus; no secondary deposit of cancerous growth; no suppuration.

3. *Æt.* 64. Three years' pain in breast; noticed tumour 3 months; slight discharge from nipple; small growth in neighbourhood of nipple removed; slight suppuration of wound, which, however, healed in 3 weeks. Death occurred on 30th day suddenly; no rise of temperature. P.M.—Right heart dilated; extensive atheroma of aorta; early "nutmeg" liver; early interstitial nephritis; fibrous growths on pleural surfaces of left lung not carcinomatous.

4. *Æt.* 70. Chronic scirrhus of right breast, about 3 years' duration; no enlargement of axillary glands; removal. Death from shock; never rallied from operation. P.M.—No secondary growths; fibrous adhesions over apices of both lungs.

Recurrent cases.—Six in breast, 2 in axillary glands. Primary growth removed $5\frac{1}{2}$ years, 14, 12, 10, $4\frac{1}{2}$, and 4 months previously.

Fatal case.—*Æt.* 66. Four months after 1st operation rapid recurrence. Ulceration. Death from congestion of lungs and exhaustion on 37th day.

Cæcum.—Male, *æt.* 35. Three months' symptoms; epigastric pain, headache, occasional attacks of diarrhœa, and vomiting; fairly moveable tumour in cæcal region; excision of cæcum and 12 inches of adherent intestine; ends brought out to form artificial anus; progress very good; no sign of dissemination of growth; so on 70th day attempt made to restore continuity of bowel; intestine freed from cicatrix with difficulty; small intestine inserted into large intestine; catgut sutures. Death on 2nd day. P.M.—Minute gap (only admitting a

bristle) in line of suture on deeper surface of intestine at point of mesenteric attachment; elsewhere union complete; localised peritonitis; 1 mesenteric gland enlarged; no other sign of secondary growth.

Rectum.—Males 5, females 7. C. 2, R. 6, U. 2, D. 2. Excision 3; partial excision 1; colotomy 5: inguinal 2; lumbar 3.

Fatal cases.

1. Female, æt. 23. Transferred from Adelaide after (1) ovariectomy and (2) inguinal colotomy for malignant stricture of upper end of rectum. Death from exhaustion and secondary growths in pelvis, peritoneum, and liver.

2. Female, æt. 43. Malignant disease of upper end of rectum. Death from acute peritonitis after operation for resection of malignant disease and enterorraphy (lumbar colotomy had been performed 2 months previously in medical ward).

Epithelioma—

Of face.—Male, æt. 72. Small epithelial tumours near eye. See 'Path. Soc. Trans.,' Feb. 4th, 1890, and Report of Morbid Growths Committee.

Do., recurrent.—Same patient three times admitted. Original growth diagnosed as rodent ulcer, removed from nose about 1 year previously; 7 or 8 years' history of growth. Microscopical examination showed typical squamous epithelioma.

Of cheek.—One inside mouth, opposite molar teeth, relieved by operation; 1 extensive ulceration, with destruction of whole of left buccal region, exposing jaws (closed, with temporary relief, by plastic operation, after removal of growth); 1 close to mouth, removed, cured.

Tongue.—Males 18, females 5. C. 13, R. 4, U. 3, D. 3. Glands also infected in 5. Family history of phthisis in 1; of cancer 1; attributed to irritation of carious teeth 10; to smoking 3; to both 3. Three too advanced for operation. One (male, æt. 53) also had a "duct cancer" of nipple; see 'Path. Soc. Trans.,' Feb. 4th, 1890.

Fatal cases.

1. Male, æt. 57. Extensive growth affecting both sides of tongue. Preliminary tracheotomy; excision of tongue; feeding by nasal tube. Pneumonia. Death 13th day.

2. Male, æt. 64. Growth noticed a few months; ulceration, chiefly left side, involving floor of mouth. Chronic bronchitis. Operation, excision of whole tongue; two sides removed separately after incision down raphe with scissors. Nasal tube feeding. Death 24th day. Gangrene of lung.

3. Female, æt. 70. Noticed 5 or 6 weeks. Ulceration, dorsum of tongue. Anterior portion with growth removed with scissors. Death 2nd day; shock.

Among the female cases, note two, both aged 24, admitted with epithelioma of rapid growth. Excision in both. Both discharged apparently cured, but recurrence occurred later, with infection of glands. For continuation of cases see Reports for 1890.

Of palate.—Male, æt. 56. Typical epitheliomatous ulcer on hard palate. Excised. Cured.

Floor of mouth.—Males 5. Two unfit for operation. In remainder excision

of growth by external incision; inferior maxilla divided in two cases; in one a portion removed.

Recurrent do.—Males 5. One unfit for operation. Case entered as “relieved.” Readmitted later for third operation, and discharged apparently cured.

Fatal case.—Recurrent growth after epithelioma of tongue. Admitted with dyspnoea from pressure of enlarged glands. Tracheotomy. Death from exhaustion on 6th day.

Secondary growth in cervical glands.—Six secondary to epithelioma of tongue; 1 to do. of lip (first operation 25 years previously).

Rodent ulcer.—Males 3, females 3.

Of ear 1 (male, æt. 68, 15 months’ duration).

Of cheek 2 (male, æt. 42, 4 years’ duration, and female, æt. 58, 5 years’ duration).

Of nose 1 (female, æt. 49, 5 years’ duration).

Of eyelid 1 (male, æt. 42, 15 years’ duration).

Of skull 1 (female, æt. 60, 9 years’ duration; fatal from involvement of brain).

Sarcoma—

Of face.—Male, æt. 49. Malar region, 12 months’ duration. Had been diagnosed as nævus before admission, and injected with tinct. ferri perchlor. on removal. Pigmented sarcoma (pigment gave no iron reaction on chemical testing). Readmitted 5 months later with recurrence, partly melanotic, and several disseminated melanotic growths in skin of trunk and extremities.

Of back.—Female, æt. 1 year. Tumour in skin over lower dorsal region, three inches to right of spine; noticed since 6 weeks after birth. Gradual extension. Covered with thin crop of brown hairs. No operation.

Superior maxilla.—Males 3, females 2. C. 4, R. 1. Æt. (males) 23, 56, and 62; (females) 23 and 37. Disease apparently originated in antrum in 4 cases; in 1 from external perineum. One case too advanced for excision.

Inferior maxilla.—Males 2, æt. 41 and 49. Both periosteal. One cured by excision of half jaw; 1 died from pneumonia after excision, no secondary growths. Female, æt. 11; growth apparently central, expanding jaw. Too advanced for operation.

Breast—

“*Adeno-sarcoma.*”—Female, æt. 48. Two years’ duration. Large tumour, $5\frac{1}{4} \times 3\frac{1}{2}$ inches; no enlarged glands; no discharge from nipple. Discharged cured 17th day after operation.

“*Spindle-celled sarcoma,*” *recurrent.*—Female, æt. 42. First operation Oct., 1888; small tumour of 1 month’s duration, adherent to skin, size of walnut, removed; first intention healing; discharged cured. Second admission Feb., 1889; recurrence in scar; growth softer and more round-celled than in primary growth; discharged apparently cured on 17th day. Readmitted 3 months later; slight recurrence; removed; discharged cured on 43rd day.

Of bladder.—Male, æt. 51; female, æt. 53. Mixed sarcoma. Duration of symptoms 10 weeks and 4 months respectively. Perinæal section 1; dilatation of urethra 1. P.M.—Male: soft sarcoma, size of orange, filling up interior of bladder, springing from fundus and anterior wall; ureters and pelves of kidneys

dilated. Female: soft growth surrounding vesical end of urethra completely, bulging slightly into bladder.

Testis.—Male, æt. 39. Nine weeks' duration. No history of blow or other injury. Operation, removal. No recurrence in scar, but died 32 days later with secondary growths in viscera.

Pelvis.—Male 1, æt. 51; female 1, æt. 19. Too extensive for operation. Discharged unrelieved.

Pectoralis major, recurrent.—Male, æt. 3. First operation when 10 weeks old. No recurrence noticed till 2 weeks before admission; size of small walnut, spindle-celled, with degeneration cyst in centre; removed. Healing by first intention. Discharged "cured" 23rd day. (Subsequently readmitted, see Records for 1890.)

Bone.—Periosteal 4.

Fatal case.—Male, æt. 1 year 7 months. Peripheral sarcoma, left fibula; 6 weeks' duration; extending over upper half of fibula. Amputation through lower third of thigh. Death from acute septicæmia.

Central 1. Male, æt. 14. Five weeks before admission rejected for army, being unable to hop on right leg. Pain for first time after this, and swelling noticed. Incised; wound did not heal; granulations fungated and bled much. On admission upper end of shaft of tibia expanded; dark red fungating mass protruding from wound. Amputation lower third of thigh; popliteal glands infected. Healed well. Discharged apparently cured on 34th day after operation. Microscopical examination of primary growth showed round-celled sarcoma with numerous giant-cells; popliteal gland infected showed only round cells. (Reported to have died of recurrence in viscera about 6 months after discharge.)

Of thigh.—Cystic fibro-sarcoma. Males 2, æt. 23 and 35. See 'Path. Trans.,' 1889.

Malignant disease (nature undetermined).

Bladder.—Males 3.

1. Æt. 54. Three months' history; occasional hæmaturia; increased frequency and pain in micturition. Cystiscopy. No ulceration; lobulated tumour from left side of trigone; no calculus seen. Two minute phosphatic calculi passed on day after examination, and some urethritis for about 1 week. Discharged relieved 33rd day.

2. Æt. 65. Intermittent hæmaturia and attacks of retention for 2 years. On supra-pubic cystotomy, tumour from base of bladder and behind it; eight small black calculi (size of peas). Supra-pubic drainage established with vulcanite tube and shield fitted in. Discharged relieved 50th day.

3. *Fatal case*.—Æt. 58. Seven months' history, hæmaturia and dysuria. Tumour felt on bimanual palpation between rectum and hypogastrium. Supra-pubic cystotomy; tumour found filling bladder; drainage established. Death from exhaustion 34th day.

Papilloma—

Of penis.—Male, æt. 40. Eleven years' duration. History of gonorrhœa. No signs of syphilis. Quiescent till 4 months before admission, when ulceration commenced, and extended through prepuce. Amputation of penis. Microscopic

examination of a small portion showed no evidence of malignant disease at point examined, but appearances generally suggested its presence. Specimen placed in museum.

Of larynx.—Old case of thyrotomy. Admitted to have tracheotomy tube changed, a few small papillomata being removed from near wound.

Of vulva.—Female, æt. 26. Four months' growth. Due to irritation of leucorrhœal discharge. Removed by scissors and cautery; cured.

Of perinæum.—Female, æt. 20. No known cause. Six months' duration. Cautery; cured.

Lymphadenoma.—Male, æt. 13. Glands in groin; axillæ, &c., enlarged; marked evidence of congenital syphilis. Temperature irregular, occasionally reaching 103° without obvious cause. Glands in groin excised; much trouble from hæmorrhage. Ligature of femoral vein; no complication. Great improvement followed administration of pot. iod. and tonics.

Lymphoma.—Tumour of tonsil. Male, æt. 48. Twice admitted. Six or 7 months' duration before first admission. Removed from right and left on separate occasions of admission. Growth showed no sign of anything beyond hypertrophied lymphatic tissue. Discharged cured on 2nd occasion.

Angioma.—Females 3, æt. 16, 14, and 16. Face 1; shoulder 1, and wrist 1. First two excised entire; one at wrist could not be dissected out from among flexor tendons, &c., so was cured by multiple ligature and division of anastomosing veins; all cured.

Recurrent parotid tumour.—Male, æt. 37. First operation 13 years previously; recurrence noticed 7 months; removed with some difficulty, caused by extensions of growth amongst various structures of parotid region; cured. Female, æt. 30. First operation 5 years ago; 2 years' recurrence; small nodule on admission; patient refused operation.

Fibro-myoma of uterus.—1. Female, æt. 40. Some operation involving incision of abdominal wall and removal of tumour (nature unknown) 4 years previously; recurrence 12 months; large myoma filling abdomen to above umbilicus; Apostoli's treatment, 6 sittings, positive pole in uterus (current 80 milliampères on 1st occasion, up to 150 and 200 at subsequent sittings); general health improved on discharge; no diminution in size of tumour; 1 sitting caused a second menstrual flow 1 week after a period had ceased. The use of the battery always caused severe pain.

2, 3, and 5. Cases of subperitoneal fibroids; operation not advised.

4. Female, æt. 40. Enormous fibroid enlargement of uterus, filling abdomen; hysterectomy; progress quite favorable, temperature normal till 13th day, when sudden death occurred from pulmonary embolism, due to clot detached from internal iliac vein; slight pyelitis of right kidney with dilated ureter.

6. Female, æt. 49. Large fibro-cystic tumour, 4 or 5 years' duration, diagnosed as ovarian; abdominal section; hysterectomy; bladder extending up over front of tumour, which arose from anterior surface of uterus. Microscopic examination: myxomatous degeneration in fibro-myoma. See 'Path. Soc. Trans.,' 1889-90.

Keloid.—Males 2, both of nose. One commenced in a patient, æt. 61, as an

hypertrophied scar after wound of nose 20 years before; 4 or 5 operations for removal at various hospitals; excision; discharged apparently cured. The other, in patient *æt.* 28, commenced spontaneously at 7 years of age; cauterised and finally excised 11 months before admission; recurrence 6 months; growth removed; cured.

Nasal polypi.—1. Male, *æt.* 25. Nasal polypi, old case of evisceration of orbit for naso-orbital tumour; granulation growth removed from inner canthus; cure.

2. Male, *æt.* 51. Large indurated hæmorrhagic nasal polypus protruding from nostril; 3 weeks' growth, but symptoms of obstruction for several years; nose slit vertically; polypus extracted; cured.

3. Female, *æt.* 28. Nasal polypi; in hospital in 1888 for polypi and supposed naso-orbital sarcoma; proptosis, &c., present, but these disappeared after removal of polypi from nose. On present admission naso-pharynx scraped, and septum removed.

Cyst of breast.—Females 4. C. 4. Signs of lobular interstitial mastitis in 2; 1 a single woman, 1 a widow, who had never had children; all excised and cured; fluid in 3 clear yellow and serous, in 1 turbid and milky.

Of epididymis.—Male, *æt.* 23. Cystic disease of epididymis, 9 weeks' duration; castration; cure; no sign of malignant disease; multiple small cysts with excess of fibrous tissue.

Ovarian.—Females 7. C. 7.

1. *Æt.* 36, married. "Inflammation of womb" $3\frac{1}{2}$ years ago, after confinement; catamenia regular and normal. Tumour right iliac region noticed 4 months ago; rapid increase lately; several attacks of abdominal tenderness and pain. On admission, elastic tumour up to 2 in. above umbilicus, moveable; no solid masses felt; small bronchocele; median 5 in. incision; cyst tapped; a few adhesions ligatured and divided; pedicle (from right broad ligament) ligatured with stout silk; cyst removed; no complications. Temperature 100° for 2 days, never higher; sutures removed 10th day. Discharged cured 57th day (25 days after operation).

2. *Æt.* 36, married, 5 children, youngest 2 years, no miscarriages. Catamenia regular and normal; tumour left hypogastrium 3 months; slow increase till 1 week ago, when there was acute attack of abdominal pain and rapid increase in size of tumour, which was aspirated; fluid viscid, containing cholesterine, corpuscles of various size, some very large, and a little blood. On admission, tumour reaching to just above umbilicus; much abdominal tenderness, which subsided under warm fomentations and morphia; operation 33rd day; large cyst; pedicle found partly twisted, obstructing circulation through it; vitality of cyst evidently partly kept up by thick and vascular adhesions. Pedicle and adhesions ligatured and divided, wound sutured. Temperature never above 99.6° . No complications; sutures removed 6th day. Discharged cured 56th day, 24 days after operation.

3. *Æt.* 49, married, 7 children, 3 miscarriages. Menses ceased 7 years ago; abdominal discomfort for 2 years; tumour discovered 7 weeks before admission, during treatment for an attack of diarrhœa; lobulated right ovarian tumour up to umbilicus. Operation 16th day; cystic adenoma, with intra-cystic papillo-

mata; no adhesions; pedicle ligatured with silk; pelvic cavity sponged out; wound closed without drainage. No complications. Wound dressed, sutures removed 7th day after operation. Discharged cured 59th day, 45 days after operation.

4. *Æt.* 74, unmarried. Abdominal tumour noticed 3 years; occasional attack of severe pain. On admission, cystic tumour filling abdominal cavity; operation 11th day, $4\frac{1}{2}$ quarts of fluid drawn off; no adhesions; pedicle ligatured with silk. Temperature never above 99.6° . No complications. Discharged cured 28th day after operation.

5. *Æt.* 25, married, 4 children, youngest 5 months old. Catamenia regular and normal; ovarian (unilocular) cyst reaching to umbilicus. Operation 35th day; no adhesions; some fluid escaped into peritoneal cavity on tapping cyst; cyst removed; pedicle ligatured with silk; abdominal cavity sponged out; wound closed; no drainage-tube. No complications. Discharged cured 20 days after operation.

6. *Æt.* 30, married, 4 children, youngest 7 weeks old. Symptoms of abdominal tumour for about 1 year. Operation 20th day; large multilocular cystoma removed; pedicle ligatured with stout silk; no drainage. No complication. Discharged cured 28th day after operation.

7. *Æt.* 43, unmarried. Symptoms 7 months; catamenia profuse and occurring every fortnight; losing flesh. Operation 5th day; multiple cysts with some solid growth; a few adhesions to anterior abdominal wall, not requiring ligature; no adhesion to intestine; double ligature of pedicle with stout silk; no drainage; wound closed. No complications. Discharged cured 24th day.

Hydatid.—*Intra-abdominal.*—Female, *æt.* 32. Obscure symptoms for 4 years; date when tumour first noticed uncertain; 5 weeks before admission abdominal pain, and occasional vomiting; jaundice; progressive emaciation and febrility (temperature often 104° or 105°). On admission, tense tender swelling in right hypochondrium, moving slightly with respiration. Incision 12th day; suppurating hydatids escaped before any sign of peritoneal cavity (probably closed by adhesions); cyst washed out; drainage-tube inserted. Discharged on 103rd day after operation, with minute sinus, with very scanty discharge, in other respects in very good health.

NERVOUS SYSTEM.

Paræsthesia of hand.—Males 4.

(a) Wounds of wrist 3; *æt.* 29, 33, and 50. Division of median nerve 2; duration since injury 1 month and 9 weeks respectively; anæsthesia palmar surface of thumb and 1st and 2nd fingers, and radial half of palm, also dorsal surface of 1st and 2nd fingers from 1st interphalangeal joint to tip; resection of bulbous end of proximal portion, and suture. Partial return of sensation noticed 23 days after operation in one case; in the other no return of sensation when discharged. Twelve days after operation wound healed. Division of ulnar nerve 1, 6 months previously (see notes for 1888); nerve sutured; restoration of sensation apparently commenced within a few hours after suture,

and was reported to be complete 12 days later, when he was discharged; sensation then became gradually impaired, and on readmission there was complete anæsthesia of ulnar half of hand and 4th and 5th digits and loss of power in muscles of thumb; scar explored, nerve found to be continuous, but involved in cicatrix, from which it was freed; return of sensation noticed on 8th day after operation; complete restoration in about 4 weeks.

(b) Old contused wound of elbow, with injury to ulnar nerve, 1; æt. 27; œdema, sluggish circulation, and loss of power in forearm and hand. Onset gradual after injury; some hyperæsthesia, no anæsthesia. Treated by massage, with improvement in condition. Discharged relieved, for further treatment as out-patient.

CIRCULATORY SYSTEM.

Selected cases.

Aneurysm—

1. *Right common carotid.*—Female, æt. 70. Rheumatic fever 40 years ago; pulsation 3 years; arteries thickened. No surgical treatment advised.

2. *Left internal carotid and right common carotid.*—Female, æt. 61. Obscure history of syphilis; sudden onset during night 18 years previously, acute orbital pain, proptosis, internal strabismus, and blanching of hair. Symptoms quiescent till 2 years before admission, when epistaxis commenced; repeated attacks, more profuse, since then, with aggravation of the symptoms; total deafness of left ear, and impaired vision in left eye. It had been decided to ligature the left common carotid, but death occurred suddenly from profuse epistaxis. P.M.—Aneurysm of internal carotid, bulging into ethmoidal cells; examination of head alone permitted.

3. *Common femoral.*—Male, æt. 29. A powerful man; no history of injury; 2 months' duration. Size of swelling on admission about $6 \times 4\frac{1}{2}$ inches. Ligature of external iliac; much difficulty owing to thickness of abdominal walls. External iliac artery diseased for at least 1 inch above aneurysm. Kangaroo tendon ligature; wound closed; no drainage-tube; some suppuration. Discharged cured 46 days after operation.

4. *Popliteal.*—Males 3, æt. 31, 31, and 27; all cured; i and ii reported in 'Lancet,' 1890, vol. i.

iii. A policeman, in-patient in 1888, for aneurysm of right popliteal artery; cured by ligature of superficial femoral artery. Readmitted with aneurysm of left popliteal; pain in knee and leg about 2 months; aneurysm noticed about 2 weeks; digital compression caused sloughing of skin; superficial femoral ligatured on 87th day. Discharged cured 46 days later.

For case of Pyæmia after operation for Varicose Veins see Special Table II.

THYROID GLAND.

Male 1, æt. 25, native of Stevenage. Swelling of right lobe of thyroid commenced 7 months ago. Steady increase for 3 months, since then stationary.

Some dyspnœa on exertion ; incision ; ligature of thyroid vessels on right side ; isthmus ligatured and right lobe excised. Paralysis of right vocal cord after operation, healing by first intention. Discharged 11th day, 8th day after operation.

Females 3.

1. *Æt.* 17, unmarried, native of Guildford. Soft pulsating bronchocele, especially on right side, 5 years' duration ; no exophthalmos. *Treatment.*—Tincture of belladonna from $m \times$ three times a day, increased gradually up to nlv . No improvement. Then constant current to neck. Discharged 66th day. No marked change in symptom ; swelling very slightly diminished.

2. *Æt.* 45, married, 4 children, all died in childbirth, native of Cornwall. Swelling noticed 1 year, right side ; dyspnœa, palpitation, no exophthalmos, no pulsation ; incision on 48th day, right lobe excised after ligature of isthmus and vessels on right side. Six days after operation some hoarseness noticed ; paralysis of right vocal cord discovered. On discharge, on 104th day, wound healed ; partial return of motion in vocal cord.

3. *Æt.* 27, married, 3 children, native of New Cross, London. Bronchocele of right side commenced $2\frac{1}{2}$ years ago during 2nd pregnancy ; incision 6th day ; right lobe (cystic) excised after ligature of isthmus and vessels. Discharged cured on 18th day.

DIGESTIVE SYSTEM.

(For Hernia, see Special Table III.)

Intestinal obstruction.—1. Male, *æt.* 44. Small lump in abdomen, near umbilicus, noticed 5 weeks ; no definite history of injury to account for it. Gradual increase ; poulticed. Five days before admission acute pain, vomiting ; constipation 3 days ; abdomen distended ; collapse ; incision. Abscess thought to be in abdominal wall ; drainage ; very slight relief ; intestinal obstruction continued ; mass felt in rectum ; supposed tumour. Former incision enlarged ; cavity of abscess formed by matted small intestines ; one coil wounded ; closed by suture. Supposed tumour formed of matted intestine ; adhesions separated, liberating more offensive pus ; immediate relief to obstruction. Fourth day fæces through wound ; fistula continued, but general condition improved rapidly. Discharged 44th day after operation ; small fæcal fistula remained for 3 months, after which the man returned to work (railway engineer) wearing an abdominal belt.

Tubercular peritonitis.—Female, *æt.* 13 ; no family history of phthisis ; symptoms about 4 months ; onset insidious ; abdomen very tense ; temp. 102° ; abdominal section ; omentum bulged into wound ; incised ; pus 3 or 4 oz. ; drainage-tube ; no irrigation ; temporary improvement. On 26th day discharge from wound became fæcal, and death occurred from exhaustion on the 42nd day. P.M.—Tubercle of lungs, liver, and kidneys ; multiform perforation of jejunum, but no tubercle seen in mucous membrane of intestine anywhere.

Perforation of vermiform appendix ; peritonitis.—Male, *æt.* 15. No symptoms previous to sudden sharp pain 7 days before admission ; vomiting ; disten-

sion of abdomen; continued attacks of severe abdominal pain. On admission, severe collapse; median incision; faecal pus; intestines matted together; incision over caecum; vermiform appendix hard and enlarged; abdominal cavity irrigated; drainage-tube inserted; condition of patient too severe to admit of operation on vermiform appendix; rallied somewhat from operation, but died next day. P.M.—Perforation of vermiform appendix about halfway down posteriorly; faecal concretion near entrance of caecum.

Stricture of rectum.—Females 3, æt. 30, 34, and 36. R. 2, U. 1; all married. All had borne several children; 2 had had miscarriages. History of inoculation with syphilis in 1; duration of symptoms “a few months,” “6 or 7 years,” and “9 years” respectively. Position of stricture about 1 inch from anus in 2 (including syphilitic case), in the other 3 inches up.

Ulcerative proctitis.—Female 1, æt. 31, married. Family history of phthisis; doubtful personal history of syphilis; symptoms 3 years; pain, diarrhœa, and incontinence; on examination, circular ulceration of lower 3 inches of rectum; no obvious stricture. Relieved by division of sphincter and iodoform ointment.

GENITO-URINARY SYSTEM.

Hydrocele.—Males 9. C. 8, R. 1. Seven of tunica vaginalis; 2 funicular; 5 injected with carbolic acid and glycerine, in 1 of which fluid re-collected; 3 incised and sac sutured to skin, in 1 of which (funicular) part of sac was excised; 1 (funicular) cured by rest and ice-bag.

Mastitis—

a. Chronic interstitial.—Female 1. C. 1. Female, æt. 48, single, no children. Eight years' history. Distinct lobulated, not very hard tumour in right breast; no glands; skin normal. After treatment with Ung. Pot. Iod., induration subsided, a few cystic nodules being left. Readmitted 3 months later with a lobulated indistinctly fluctuating swelling; skin normal. Amputation; small cysts and fibrous induration found.

b. Tubercular.—Female 1. C. 1. Female, æt. 38, married. Four confinements; 10 years' history of swelling round right nipple; no pain till 8 weeks before admission, when swelling began to increase and become painful. No discharge from nipple. Hard swelling round nipple, with small abscess in centre; no glands moveable over deep structures; scraped and dressed antiseptically.

Ruptured uterus.—Æt. 39. Recent history of syphilis; 8 children, 5 miscarriages. Excessive obesity, gradually increasing. Labour commenced about 12 hours before admission; slow progress for 6 hours; no obvious cause for delay except insufficient flexion of foetal head and œdema of anterior lip of os; these having been corrected labour advanced steadily, and head descended fully into pelvis; about 2 hours later sudden collapse, with cessation of pains, occurred immediately after a violent pain, with sensation of “tearing.” On examination, body of fœtus still in uterus, head probably in abdominal cavity, through rent in posterior wall; fœtus extracted with much difficulty owing to locking of head and 1 leg at brim. Prolapse of intestines through wound into

vagina; replaced; patient sent up to hospital; severe shock. Signs of hæmorrhage into abdominal cavity; abdominal section with view to Porro's operation, but condition of patient too bad to permit it; abdominal cavity irrigated, clots turned out, glass drainage-tube; abdominal wound closed; never rallied from shock. Death 5 hours after operation.

Perinæal fistula (urinary).—Males 8. C. 6, R. 1, U. 1. One after perinæal puncture for retention (6 months before admission); refused treatment; 1 after external urethrotomy for traumatic rupture of urethra, cured by continuous catheterisation and sounds for traumatic stricture; 3 after perinæal abscesses and stricture, all cured by external urethrotomy; 1 after lithotomy (1 year before admission) treated with cautery, relieved, sent to convalescent home; subsequently readmitted, again cauterised, and discharged cured.

Urethral stricture.—Males 27. C. 19, R. 4, U. 2, D. 2. Due to gonorrhœa 17; traumatic 3; not stated 4; attributed to rheumatism 1, to gout 2. Average duration since first attack of gonorrhœa in 17 cases = 10·8 years. Average interval between attack of gonorrhœa and onset of stricture symptoms in 17 cases = 5·6 years. *Treatment*.—Interrupted catheterisation 11; continuous catheterisation 4; Holt's method 1; external urethrotomy 4; internal urethrotomy 5; 1 refused treatment, and 1 died (see fatal cases) before treatment commenced. Discharged able to pass No. 7 catheter 1; No. 9, 1; No. 11, 2; No. 12, 8; and No. 12, 5; not stated 8.

Fatal cases.

1. See Special Table II, "Pyæmia."

2. Male, æt. 68. External urethrotomy in 1873 for stricture; catheter passed once a month after this till September, 1888, when attempts failed; in March, 1889, soft No. 3 passed; a fortnight later perinæal abscesses formed and burst, leaving urinary fistula; no further treatment till admission; signs of chronic cystitis; catheters passed from No. 2 up to No. 12; bladder washed out; suppression of urine supervened; rigors; death on 18th day. P.M.—Chronic cystitis, enlarged prostate, early nephritis.

Retention.—Males 14. C. 11, R. 2, D. 1. Six due to enlarged prostate, of which 3 were treated by simple catheterism, 2 by catheterism and washing out of bladder, including 1 who died of cystitis; 1 by supra-pubic cystotomy; 5 due to stricture following gonorrhœa; of these 4 treated by catheters, 1 supra-pubic cystotomy. One case, æt. 71, followed excessive drinking; 1 presumably due to irritation of tense hydrocele; 1 followed amputation of penis for epithelioma.

Extravasation of urine.—Males 4. C. 2, D. 2. All cases resulted from old strictures, and all treated by incisions and catheterisation. One fatal case from exhaustion, the other from peritonitis and surgical kidney.

Tuberculous disease of bladder.—Male 2, female 1. D. 3. Family and previous history good in all.

1. Male, æt. 43. Symptoms about 18 months. Increasing difficulty in micturition. Hæmaturia 6 months. Perinæal section 19th day; drainage. Death 170th day from exhaustion. P.M.—Tubercle of left kidney and bladder; lardaceous disease of viscera; no tubercle in lungs; a few old pleuritic adhesions.

2. Male, æt. 25. Occasional hæmaturia 2 years; dysuria with increased frequency 6 months. Supra-pubic drainage 59th day. Death 98th day from exhaustion. P.M.—Tubercle in kidneys, bladder, and lungs, and perinephric abscess.

3. Female, æt. 16. Pain and hæmaturia 5 months. Supra-pubic cystotomy 183rd day; tuberculous mucous membrane, with phosphatic deposit scraped away; much hæmorrhage. Death from shock next day. P.M.—Tubercle of both kidneys and bladder; thick pus in outer ends of Fallopian tubes; other viscera healthy.

Renal calculus.—1. Female, æt. 39. Family history of phthisis. Pain on micturition and pyurea, &c., for about 7 years; swelling in right lumbar and iliac region noticed about 10 months. Nephrectomy on day of transfer from medical ward. Kidney consisted of a mass of calculi in suppurating cavities. Progress favorable for first fortnight; pus and albumen almost disappeared from urine, but discharge from lumbar wound profuse and offensive. From 14th day became ill; vomiting, fever, drowsiness, moist sounds at bases of lungs; gradually fell into comatose condition, and died on 25th day. P.M.—No disease in remaining abdominal viscera; on right side acute pleurisy, with empyema (pus=1 pint); no communication with wound.

2. Female, æt. 34. Transferred from medical ward. Nephrectomy. Kidney converted into abscess cavities, with several small calculi. Death from shock on day after operation.

Vesical calculus.—1. Male, æt. 8. Symptoms 2 months. Ten days before admission passed small gravel. Albumen $\frac{1}{10}$. Left lateral lithotomy 7th day. Stone=oxalates + phosphates, $\frac{3}{4} \times \frac{1}{2}$ inch. Wound healed 39th day. Discharged cured 64th day.

2. Male, æt. 12½. Symptoms since 10 months old. Trace of albumen. Supra-pubic lithotomy 35th day; stone = $1\frac{3}{8}$ inches diameter; drainage-tube into external wound, not into bladder. Placed in prone position 8 days, when urine commenced to come by urethra. Tenth day catheter tied in for 2 days. External wound healed on 15th day. Discharged cured 26th day after operation.

3. Male, æt. 35. Lateral lithotomy in 1887. Recto-vesical fistula since. Attempts to close fistula by operation failed. On present admission calculus found. Extracted by lateral lithotomy on 14th day through old wound and fistula; size of stone $1\frac{1}{2} \times 1 \times \frac{3}{4}$ inch; oxalates coated with phosphates. Some urine by urethra 22nd day, but wound did not entirely close. Discharged with small fistula on 49th day after operation.

Traumatic hydronephrosis.—See "Injuries to abdomen," 1888. Male, æt. 5. Run over in April, 1888. Three weeks later hydronephrotic tumour on left side; aspirated three times (May, June, and August). Discharged with reaccumulation in August. Readmitted December, 1888. Aspirated; 9½ oz. fluid, containing trace of urea as on previous occasions. No reaccumulation. Discharged cured January, 1889 (19th day). Has been seen several times since. No reaccumulation up to present date (February, 1890).

Pyonephrosis.—Males 3, female 1. C. 1, R. 3.

1. Male, æt. 23. "Colic" and dysuria about 2 years; much pus and $\frac{1}{8}$ albumen in urine; blood never noticed. Nephrotomy 8th day; drainage; much

fætid pus from wound; no calculus found. Discharged relieved, with small sinus in loin, on 117th day.

2. Male, æt. 36. Blood in urine 6 years before; colic 2 years. Admitted in 1888 (see old notes). Nephrotomy. Discharged apparently cured. Symptoms recurred some 7 months later; colic pains and pyurea. Readmitted. Recurrence of swelling, loin. Nephrectomy 6th day; kidney dilated, full of pus; no calculi. Discharged cured 39th day after operation.

3. Male, æt. 34. Gonorrhœa 10 years; stricture 4 years; superficial abscesses in scrotum 18 months; pus in urine 7 months; swelling in left renal region. Fourteenth day aspirator into lumbar swelling=8 oz. pus. Twenty-first day stricture divided by Maisonneuve's urethrotome, then Holt's dilator used. Twenty-sixth day lumbar incision; much cicatricial tissue around kidney; pelvis of kidney explored; no calculus, but fætid pus; drainage. Discharged 91st day; still small lumbar sinus, and still some pus in urine.

4. Female, æt. 62. Readmission. Old case of aspiration for pyonephrosis. Still pus in urine and lumbar pain; no objective signs of reaccumulation. Discharged relieved 53rd day.

LOCOMOTORY SYSTEM.

Bone—

Acute periostitis.—Suppurative.—Males 5. Cured 5. Ages, 11, 13, 13, 17, and 25 years. Femur 3, all in popliteal region; tibia 2, in shaft. Duration of symptoms before admission, 3 weeks, 2 weeks, 10 days, 7 days, and 6 days respectively. History of injury in 1 only (fall while using roller skates, symptoms 2 days later, admitted 3 weeks later); family history of phthisis in 1; rheumatic fever 12 months previously in 1; all treated by incision and antiseptics. Necrosis in case with history of injury, sequestra removed by operation.

Acute necrosis.—Osteo-myelitis.—Male 1, females 2. Ages, 14, 11, and 7 years. C. 1, R. 2; of tibia 2; of os calcis 1; history of injury in 2 (in 1 case 6 weeks, in the other 3 weeks before admission). Tibial cases treated by (1) resection of necrosed diaphysis; (2) amputation of femur. Os calcis case treated by simple removal of necrosed bone, which came away entire, except for two small portions corresponding to the epiphysical growths.

Acute epiphysitis.—Males 4; female 1. Lower epiphysis of femur 1, age 1 year; upper epiphysis of tibia 2, both æt. 10; upper epiphysis of fibula 1, æt. 17; lower epiphysis of fibula 1, æt. 12. History of injury in 2 (3 days and 1 week respectively before admission); symptoms dating from exposure to cold 3 weeks before admission 1; to prolonged walk and over-fatigue 1 (8 days before admission); no history of injury 1. All treated by incision and antiseptics. For one case—"chronic pyæmia"—see "Pyæmia," Special Table II. Temperatures on admission: 101.2°, 102.2°, 102.4°, 103°, and 104.6° respectively.

Chronic epiphysitis=tubercular disease.—Males 2, female 1. Upper epiphysis. tibia 1, æt. 9; lower do. 2, æt. 5 and 12. All cured after incision and scraping.

Chronic osteitis (tubercular caries) of great trochanter.—In 3 disease extended to the hip-joint, necessitating excision of hip. One died of lardaceous disease;

2 discharged cured, one having also had Symes' amputation for tubercular disease of opposite ankle-joint.

Diseases of joints—Arthritis, chronic—

Arthritis, multiple.—1. Male, æt. 11. No family history of phthisis. Tubercular disease of right wrist and third left metatarso-phalangeal joint. Left little finger amputated previously for tubercular disease. Tubercular ulceration of neck. Discharged to Margate.

2. Female, æt. 15 months. No family history of phthisis. Measles 5 months previously. Tubercular disease of right knee and elbow-joints; tubercular abscess of left forearm; abscess incised; exploratory incision into knee=pulpy synovial membrane; no pus; erosion of elbow-joint. Discharged relieved, apparently progressing favorably, though feeble. Reported to have died suddenly at home a few days later; cause not ascertained.

Sacro-iliac disease.—Male 1, females 3. C. 2, U. 2. Cases cured:

1. Male, æt. 17. Symptoms 2 months. Very slight swelling and tenderness over joint. Treatment: rest, and glycerine and belladonna. Discharged apparently cured on 76th day.

2. Female, æt. 24. Doubtful family history of "chest complaints." Suffers from cough and night sweats. Symptoms 8 months. Treatment: incision of joint (pus), scraping, and removal of carious bone; double Thomas splint. Discharged cured on 190th day.

Cases unrelieved: æt. 18 and 23. Symptoms 13 months and 3 years. Disease too advanced for operation; many sinuses, and in one case advanced amyloid disease (the other died 3 months later, probably from amyloid disease).

Arthritis of hip.—Males 29, females 21. C. 13, R. 33, U. 2, D. 2. Average age 9·6. Family history of phthisis in 9; do. doubtful 3. Symptoms of phthisis present in 2. Other foci of tubercular disease in 2 (both hips 1; miliary tubercle in viscera 1, see fatal case [2]; see also disease of ankle for case of affection of ankle and hip joints). History of injury in 19. Illnesses immediately preceding symptoms: acute rheumatism 1; measles 2. Treatment: excision 14; incision of abscesses 7; trephining great trochanter 1; scraping sinuses, &c., 3; Thomas splint 18; do. with extension 2; aspiration and injection of iodoform 1; re-admissions 12.

Fatal cases.

1. Male, æt. 5½. Family and previous history good. Fall 3 months before admission; began to limp immediately, with pains in right hip and knee. On admission, disease of right hip; general condition feeble. Treated by splint and extension 6 weeks; then incision of abscess and examination of joint; cartilages diseased; head of femur dislocated; chronic course of suppuration. Excision 7 months after admission, but steady extension of disease. Amputation on 360th day. Death from shock. P.M.—Amyloid disease of liver, spleen, and kidneys.

2. Female, æt. 12. Family and previous history good. Early disease of left hip, which commenced shortly after a fall 7 months before admission. On admission, no sign of suppuration. Treated with Thomas splint. No obvious change in symptoms till 2nd month after admission, when she became dull and apathetic, and suffered from retention of urine, which contained pus. No pain nor active symptoms of any kind, except slight rise of temperature. Became

more and more drowsy. Hæmaturia came on, and tenderness of left loin noticed. Gradually sank without any marked symptoms. P.M.—Hip-joint cartilage partially absorbed; tubercular ulceration of bladder; pyosalpinx; acute miliary tubercle in brain, lungs, liver, kidneys, and spleen, and small tubercular ulcers in large intestine.

Arthritis of knee.—Males 19, females 16. C. 14, R. 18, U. 3. Average age 17½. Family history of phthisis in 10; symptoms of phthisis present in 5. History of injury shortly preceding disease in 11; doubtful history in 2; 1 old case of popliteal aneurysm (cured by compression). In 1 two years previously abdominal section for tubercular peritonitis, cured; 1 case probably tertiary syphilitic disease, cured by rest and potass. iod.

Arthritis of ankle.—Males 6, females 4. C. 6, R. 4. Average age 14½. Family history of phthisis in 2; existing phthisis in 1. One had had Symes' amputation for tubercular disease of other ankle in 1888.

Arthritis, acute.

Hip.—Male, æt. 9 months (see Special Table II).

Knee.—Female, æt. 7. Family history of phthisis; always delicate. Pain and swelling in knee 3 weeks; no history of injury; temp. 101·8°. Incisions into knee-joint and over epiphysal lines; no definite epiphysal disease; no sign of tubercle; much serous fluid, slightly turbid; no definite pus; antiseptic dressings. Temperature remained high (101°—101·8°) for about a week; after that all symptoms gradually subsided, and patient discharged uncured with slight movement in knee-joint on 84th day.

Gonorrhæal arthritis.—Males 3, æt. 21, 29, and 33. Sudden onset in all; in 1 preceded by general arthritic pains; in 2 symptoms commenced 3 weeks after commencement of gonorrhœa; in other not ascertained; 1 aspirated; 4 oz. pus. Discharged cured. All treated by rest in plaster-of-Paris splint. Case relieved; still had some pain and stiffness in joint (ankle).

Loose body in knee-joint.—Males 4, female 1. C. 3, U. 2 (1 discharged for misconduct). Operation in 3.

1. Male, æt. 21. Three years previously horse fell on him while riding, twisting left leg; occasional pain in knee since in extreme flexion of knee, not otherwise; 18 months ago leg gave way coming downstairs; since then liable to sudden "catch" in joint; no loose body felt, but flexion of joint slightly limited; lateral incision; loose body felt at back; incision through popliteal space; pedunculated fibro-cartilaginous body removed with difficulty; healing delayed by some suppuration. Passive movement commenced 45th day after operation, and symptoms of chronic arthritis supervened, suggesting tubercular disease (signs of early phthisis discovered in lungs). Swelling gradually subsided with rest. Discharged apparently cured, except for stiffness of knee-joint, on 152nd day after operation.

2. Male, æt. 41. No history of injury. Loose body felt by side of patella 3 years. Operation 14th day. Pedunculated body removed size of hazel nut; white fibrous tissue growing from synovial membrane by side of patella. Discharged cured 36th day after operation.

3. Male, æt. 17. Symptoms only a few hours; "strained his knee;" no

previous injury. On admission effusion in knee; loose body felt; could be moved from side to side under patella. Operation 4th day; removal of body; cartilage calcified on one side (slightly concave), evidently part of articular cartilage, but process of separation must have been going on for considerable time. Specimen in museum; shown at Pathological Society, March, 1890.

SUMMARY OF INJURIES.

GENERAL INJURIES.

Burns.

Causes.—Ignited clothes 25; falls into fire 4; burning oil 5; lamp explosions 6; fireworks 1; gas explosions 2; not stated 2.

Fatal.—From collapse 14. *Æt.* 1, 1, 1, 3, 3, 3, 3, 4, 4, 4, 12, 36, 45, 54. Of these 7 died within 24 hours, and 7 within 48 hours. From exhaustion 7. *Æt.* 6 months, 1, 2, 9, 60, 62, 64. Duration of residence 3, 4, 6, 7, 7, 8, and 9 days. From suppression of urine 2 F., in neither of which was there any rash, but 1 complained of sore throat shortly before death. Three transferred for scarlatina.

Scalds.

Causes.—Boiling water 28; tea 6; broth 2; fat 1; lemonade 1; soda and water 1; wax 1; sucking at spout of kettle 8.

Fatal.—From collapse 4. *Æt.* 1, 2, 2, 3 years. Of these 1 died within 24 hours, 3 within 48. From exhaustion 3. *Æt.* 2, 3, 50 years. Duration of residence 2, 7, and 14 days. From œdema of larynx 2. From scarlatiniform rash and suppression of urine 1.

Transferred for scarlatina 4, for erysipelas 2. 1 HCl burn, *æt.* 19, C.

LOCAL INJURIES.

Scalp wounds.

Selected cases.

1. Male, *æt.* 68. Knocked down by carriage. On admission insensible, slight scalp wound left parietal eminence; recovered consciousness in a few hours; no further symptoms till 2nd day at 2 p.m. when he had a "fit," sudden "cramp" in left hand, followed by rigidity and flexion of left arm, then rigidity of left leg; no apparent loss of consciousness, but drowsiness followed, and he slept till the following day. Right side was not at all affected. Left hospital at his own request, against advice, on 3rd day.

2. Male, *æt.* 1 year and 8 months. Knocked down by milk-cart. On admission, unconscious; epistaxis; scalp torn off, exposing area of bare bone $1\frac{1}{2}$ inches in diameter over right temporal region. Recovered consciousness fully next day.

Progress of case very good except for occasional rise of temperature (99° — 102°) till 21st day, when several attacks of sudden convulsions occurred, epileptic in character, but not localised, followed by coma; temperature rose to 104° . Trephining over exposed area of bone (which appeared quite healthy, with minute points of granulation springing up through it), and also over right motor area; free serous discharge, and congestion of membranes found; dura mater punctured; no pus; child never rallied at all, but died 12 hours later; no further convulsions. P.M.—Right side of brain healthy except for oedema at point under exposed area of bone. Left side, superficial softening of upper frontal convolutions and upper Rolandic area. No abscess. No fracture of any part of skull.

Concussion.—Males 86, females 29. C. 93, R. 2, U. 1, D. 1. In the majority there were no serious symptoms, the cases being mostly children admitted for a few days as a matter of precaution. Epistaxis occurred in 5 (1 fracture of nasal bone); hæmorrhage from ears in 2 (in both probably from wound of external auditory meatus; no laceration of membrana tympani seen); delirium tremens occurred in 2; 3 were admitted having fallen as result of epilepsy.

Selected cases.

1. Male, æt. 6. Knocked down in street while playing with other boys. On admission $1\frac{1}{2}$ hours later giddy; not unconscious; had been sick; temp. 102° . Giddiness soon passed off; no symptoms other than high temperature, which rose to 104° on second day, and then gradually subsided to normal on 5th day. Discharged cured on 6th day.

2. Male, æt. 55. Fall 15—20 feet from ladder on to back of head. Comatose on admission; pupils contracted, scarcely affected by light; pulse slow; respiration slow and deep; scalp wound, occipital region; bare bone, but no fracture found; "cerebral irritation" symptoms on 2nd day; afterwards more rational, but very restless for 6 days; often trying to get out of bed; drinking from ice-bag; on 8th day ptosis of left eye observed; pupils contracted; 10th day slight congestion of optic discs, especially left side; 19th day ptosis almost gone; occasionally rambling in speech, but quiet. Discharged cured 29th day. (Temp. 101° on admission; gradually subsided; normal from 5th day.)

3. Male, æt. 26. Knocked down by cart. On admission drowsy, not unconscious; had had an epileptic fit 18 months before, none since; temp. 103° ; gradually fell to normal on 5th day, and so remained; on 3rd day convulsion commencing with conjugate deviation of head and eyes to left, followed by tonic spasm (flexion) of fingers, wrist, and arm, left side, then rigidity of left leg; right side not affected; no loss of consciousness, but after fit remained drowsy and slept most of next day; no more fits; examination of eyes negative. Discharged cured 22nd day.

4. Male, æt. 43. Admitted 5 days after being kicked about the head by roughs; no indicative symptoms, but extreme drowsiness and nausea, which lasted about 3 weeks; temperature varied between 97° and 99° . Discharged cured on 31st day.

5. Female, æt. 8 months. Fell to ground from 5-story building; practically unconscious on admission, but moaning and crying when moved; epistaxis; fracture of left femur; temp. 100° ; temperature ranging between 103° and

105° for first 6 days in spite of tepid sponging; during 5th, 6th, and 7th days several right-sided convulsions with conjugate deviation of eyes to right; optic discs apparently normal; slight rigidity of limbs between fits; after 7th day no more fits; temperature gradually fell, varying between 98° and 102° till 30th day, afterwards normal. Discharged cured on 75th day.

Fractures of skull.—Vault.

Simple.—2, from occipital protuberance to parietal eminence, with secondary fissure into posterior fossa and contusion of cerebellum in 1, æt. 3; separation of parieto-temporal suture and fracture 1, æt. 45; diffuse subdural hæmorrhage (trephining) 1. Both died within a few hours of admission without sign of return of consciousness.

Depressed.—Æt. 4, male. Fall from window 20 feet; simple depressed fracture left side of vertex; temp. 95°; trephining; elevation and removal of portion; never rallied. Death 3 hours after admission.

Compound.—Males 2, females 1. C. 1, D. 2.

1. Male, æt. 38. Fell 15 or 20 feet from a building, falling through a thin iron roof to the ground; 30 minutes later admitted, insensible; occipital scalp wound; pupils dilated and inactive to light; urine passed involuntarily; complete coma with stertor; never rallied. Lived for 32 hours. Temp. 96° on admission, rising to 103° at death. P.M.—Fracture from vertex through occipital bone to posterior tip of temporal bone, not involving ear; also fracture of sternum below 2nd rib, and symmetrical fracture of laminae of 5th cervical vertebra; no obvious damage to spinal cord; extravasation of blood in pia-arachnoid space, especially at base; contusion of left temporo-sphenoidal lobe; small hæmorrhage into left corpus striatum; subpericardial extravasation; viscera normal.

2. Male, æt. 9. Knocked down and kicked on head; wound of forehead and fissure fracture of frontal bone; no severe symptoms. Discharged cured 8th day.

3. Female, æt. 41. Knocked down by cab; occipital scalp wound; comatose. On admission, temp. 97°; never rallied; lived 6 hours. P.M.—Linear fracture from right parietal eminence to base through foramen magnum; contusion of both frontal and left temporo-sphenoidal lobes.

Compound depressed.—M. 6, F. 1, C. 6, D. 1. Frontal region 2; fronto-parietal 2; parietal 1; parieto-occipital 1; temporo-occipital 1. Localising symptoms in 2 only (1 fatal); non-fatal case, a male, æt. 35, admitted after 40-foot fall from scaffold, with paresis of left face, arm, and leg, right pupil widely dilated; compound depressed fracture in right frontal region. Trephining; elevation of fragment; did not recover consciousness till about 5th day; paralytic symptoms gradually disappeared. Temperature 102° on admission, 100° next day, afterwards normal. Discharged cured 44th day. *Treatment.*—Trephining and elevation of fragments in 3 (æt. 23, 28, and 35).

Elevation alone in 1, æt. 8, wound of dura mater, fracture of femur—cured—enlargement of wound, irrigation and antiseptic dressings 2; æt. 6 and 11; cured.

Fatal case.—Male, æt. 50. Twenty-foot fall through trap-door on to head. Was taken home conscious but “giddy,” able to walk, but having manifest diffi-

culty in speaking, apparently from inability to articulate properly, as he became more and more drowsy; he was brought up to the hospital, and walked up to the ward; unable now to speak at all, making only a hissing sound during attempts to articulate; temperature 99° — 101° ; became more and more dull, though very restless; no paralytic symptoms in limbs; fell gradually into state of coma. Died 5th day. P.M.—Depressed fracture from junction of squamous and mastoid portion of temporal bone round to occiput (horizontal); hæmorrhage between dura mater and skull; no wound of dura; contusion of tip under surface of frontal and temporo-sphenoidal lobes, also over convolutions surrounding ascending limb of left Sylvian fissure; motor area for face, leg, and arm unaffected.

Base of skull.—M. 20, F. 2, C. 12, R. 1, D. 9. In non-fatal cases, probably anterior fossa 3, middle fossa 5; posterior fossa 5; subconjunctival ecchymosis in 3; hæmorrhage from one or both ears in 5; flow of cerebro-spinal fluid in 3 (lasting 2, 5, and 11 days); mastoid ecchymosis in 6, first noticed on 2nd day in 2, 3rd day in 2, 4th day in 1, in 1 not stated; ophthalmoplegia externa in 1, noticed 3rd day (case with subconjunctival ecchymosis and hæmorrhage from ear); case entered as relieved was transferred to St. Thomas's Home.

Complications.—Optic neuritis in 1; hæmaturia and cystitis 1 (perinæal puncture); fractured clavicle 1; fractured ribs 1. In the majority of cases (9) there was febrility for the first two or three days, but in no case that recovered did it exceed 102° . In 3 the temperature was practically normal throughout.

Fatal cases.

Æt. $1\frac{1}{2}$, 7, 29, 33, 34, 36, 36, 36, 62, and 67. Anterior and middle fossa 2; middle 3; middle and posterior 3; posterior only 1.

Complications.—Ruptured spleen 1; delirium tremens 1 (hypostatic pneumonia); subconjunctival ecchymosis 2 (one with protrusion of eye); hæmorrhage from nose and ears 1, ears only 6. Paralysis of right leg followed by irregular convulsions in 1; of the 9 fatal cases, 3 died within 24 hours; 1 on 2nd day, 1 on 3rd, 1 on 5th, the rest on 10th, 11th, and 12th days. In all except the first 3 the temperature became febrile, and in most cases reached 104° or 105° before death. Fractured base (doubtful) 2; both children in 1, slight subconjunctival ecchymosis, in the other hæmorrhage from ear (no laceration of membrana tympani found); symptoms trivial.

Wounds of palate.—Males 3. C. 2, D. 1. Two gunshot, suicidal.

Fatal case.—Revolver shot in mouth with perforation of soft palate. Bullet detected by Nelaton's probe; supposed to be in cervical vertebræ. On 4th day Cheyne-Stokes respiration, dyspnœa, and temp. 106° ; no loss of consciousness. Death. P.M.—Bullet found in base of skull; extensive cerebellar meningitis.

INJURIES TO CHEST, ABDOMEN, AND PELVIS.

Wound of chest.—Males 3, females 2. C. 5. Two pistol bullet (both suicidal); 2 stabbing cases; 1 fall on iron spike. In 1 pistol-shot case laparotomy was performed, but bullet found to have avoided abdominal cavity, passing through

pleura, causing pneumothorax; subsequently discovered lying embedded in latissimus dorsi muscle, and removed by skin incision.

Fractured rib.—Males 11, female 1. C. 8, D. 4. Of fatal cases 2 died almost immediately after admission (laceration of lung 1, rupture of liver and lungs 1); 1 died in 3 days from hæmothorax and broncho-pneumonia; 1 on 14th day pneumothorax and acute pleurisy.

Foreign body in lung.—Female, æt. 16. "Swallowed" a small button 12 months previously; dyspnœa and occasional slight hæmoptysis ever since; tracheotomy; trachea explored with probe; button not seen or felt; tracheotomy wound kept open. Next morning the button was found in the bed, presumably having been coughed up into the mouth during the operation, swallowed, and subsequently brought up with vomit on recovering from anæsthesia. Discharged cured 16th day after operation.

Fracture of spine.—Male, æt. 29. Fall down lift (estimated 70 feet; fall broken to some extent by wire netting near bottom); 11th dorsal spine depressed; 12th dorsal spine prominent; numbness, impaired sensation, and partial loss of power in legs; no absolute paralysis or anæsthesia; patellar reflex absent on left side, exaggerated on right; latter normal in 3 days, but left still absent on discharge; no loss of control over evacuations; temp. 97° on admission (a.m.) about 1 hour after accident; 100° on same evening, afterwards normal. *Treatment.*—Plaster-of-Paris jacket 8 weeks, when he was allowed to get up, wearing a leather supporting apparatus. Discharged cured 80th day, able to walk well.

Rupture of urethra.—Males 2. C. 2. Due to falling astride an obstacle in both; hæmorrhage in both; catheter passed and left in 4 and 10 days respectively; in 1 case hæmorrhage occurred several times, but was stopped by iced boracic injections and pressure.

Fractured pelvis.—Males 5, females 3. C. 5, D. 3. Three fractures through pubic ramus, 1 being complicated with ruptured urethra; in 2 parts of the iliac crest were separated, 1 complicated with fract. clavicle; in 1 fracture passed through pubic ramus and sacro-iliac synchondrosis with separation of crest of ilium; in 1 the sacro-iliac synchondrosis and symphysis pubis were separated, besides the femur, tibia, and fibula being fractured; in 1 the sacro-iliac synchondrosis was torn, and both pubic rami on both sides fractured.

INJURIES OF UPPER EXTREMITIES.

Selected cases.

Wound of axilla, &c.—Male, æt. 26. Knocked down and run over by heavy cart while intoxicated. On admission comminuted fracture of radius and ulna with dislocation of both bones backwards at elbow-joint; wound of axilla into shoulder-joint, with rupture of axillary vein; antiseptic dressings tried, but suppuration occurred and drainage was unsatisfactory, and on the 6th day amputation through shoulder-joint was performed; subsequent progress very good. Discharged cured 77th day from admission.

Wound of arm.—Male, æt. 4. Fell downstairs while carrying soda-water bottle; latter exploded, and fragment of glass penetrated arm on inner side; profuse bleeding "in spurts" occurred; father applied digital compression at once, and brought child to hospital; bleeding stopped before admission; radial pulse could be felt; wound explored; brachial artery and renal comites completely divided; ends ligatured; median nerve partly divided. Discharged cured 36th day.

Wounds of wrist.—Males 3, females 3. In 1 radial nerve divided near the wrist; anæsthesia from above wrist over outer two thirds of dorsum of hand, dorsal aspect of thumb, and of 2nd and 3rd digits as far as $\frac{3}{4}$ inch beyond line of metacarpo-phalangeal joints; nerve sutured; no return of sensation when discharged on 21st day.

Wound of palm.—Division of branches of median nerve to 2nd and 3rd digits (also division of palmar arch and of various flexor tendons); artery ligatured; tendons and nerves sutured. Discharged on 23rd day; partial return of sensation detected, apparently commenced about 4 days after suture.

Dislocation of humerus.—All subcoracoid; 3 recent (1 day, 3 days, and 15 days before admission), reduced by manipulation under anæsthetic; 3 old cases, 4 months, 4 months, and 9 weeks respectively. Of these in 1 the humerus broke near middle of shaft during manipulation to break down adhesion; in 1 attempts to reduce by manipulation failed; in the third the dislocation appeared to be only partial, and as movements were fairly free it was decided that manipulation would not be likely to improve matters.

Fracture of humerus.—Anatomical neck 2 (1 with subcoracoid dislocation also reduced); surgical neck 1; shaft 3; of latter 1 occurred in a female, æt. 55, who had had carcinoma of breast removed 1 year previously; for 1 month before admission pain in arm had been noticed, and a small recurrent nodule appeared in the breast scar. The fracture united well, and there were no signs of growth in the site of fracture on discharge on 63rd day.

Ununited fracture—humerus.—Males 2.

1. Æt. 52. Fracture at sea; 6 months before admission; false joint; operation incision; fibrous tissue on ends of bone scraped away; bone united with ivory pegs. Discharged to Convalescent Home 115th day. No union. 1st intention healing, but no osteoplastic reaction.

2. Æt. 24. Gunshot fracture 13 months before. 6 months after went to Netley, where ends of bone were sutured with wire, unsuccessfully. On admission, free movement in all directions. Operation; resection of ends of fragments; wire suture. On discharge, firm but not absolutely rigid union (120th day).

INJURIES TO LOWER EXTREMITIES.

Selected cases.

Wound of femoral artery and vein.—Male, æt. 9. During circumcision; accidentally wounded while struggling during partial anæsthesia; puncture wound of femoral artery and vein. Wound opened up; artery and vein liga-

tured. Temp. 96° after operation, rising to 103° next day; then 99° — 101° for 3 days; afterwards normal. Suppuration of wound; ligature came away in discharge on 11th day; no further complication. Discharged cured 38th day. Able to walk without difficulty.

Dislocation of hip.—Female, æt. 7. Obscure history of fall downstairs about 2 years previously. Treated elsewhere for hip disease from shortly after accident. Admitted 1 year after accident with symptoms suggesting early hip disease; discharged in Thomas's splint; readmitted; partial dorsal dislocation of femur; incision; head of femur apparently perfectly healthy, found resting on posterior edge of acetabulum the cartilage being grooved from pressure upon it; reduction found impracticable, so head of femur excised; no evidence anywhere of tubercular disease. Discharged 139th day, cured; delay due to slow healing of sinus.

Compound dislocation of fibula.—Male, æt. 23, caught between box-seat of omnibus and top of tramcar during a collision; wound of popliteal space; rupture of posterior tibial artery and vein; compound dislocation at superior tibio-fibular joint; capsule of knee-joint apparently not wounded; both heads of gastrocnemius ruptured; popliteus muscle exposed; wound dressed antiseptically, but acute spreading traumatic gangrene set in, and the limb was amputated in upper third of thigh. Temperature having been up to 104° (with several rigors fell at once after operation, and gradually fell to normal; evening rises to 101° to 102° occurred for 2 days, but after 5th day the temperature remained normal throughout till discharge, cured, on 69th day.

Compound outward dislocation of foot.—Practically a compound "Pott's fracture" with much displacement. Projection of tibia sawn off; internal malleolus (already separated by fracture) removed; also portions of external malleolus (comminuted); antiseptic dressings. Discharged cured, able to walk with fair movement in ankle-joint, and no pain, on 78th day.

Patella.—23 transverse fracture from muscular violence. 1 case, æt. 35 (fracture 3 weeks before admission), treated by subcutaneous wire suture; wire removed in 3 weeks; perfect union. Discharged cured 43rd day. All rest treated by plaster-of-Paris splints.

Dupuytren's fracture (fracture of tibia and fibula, lower third).—Male, æt. 33. While in fit of delirium tremens jumped from window, falling 15 feet on to his feet. Fracture of both bones close to ankle-joint; wide separation of fragments; foot driven up and impacted between them; put up in lateral splints on 9th day; delirium tremens having subsided, fracture was reduced under anæsthetic, and put up in plaster splints. Discharged 'cured' on 36th day in plaster splint.

Injuries to joints.

Displaced semilunar cartilage.—M. 2.

1. Æt. 33. Seven months ago kicked on knee by horse; effusion, which subsided under cold applications and rest, but "weakness" of joint remained; 2 months later slipped and twisted knee while carrying heavy weight; effusion; treated as before. On admission, signs of subacute synovitis; tenderness by side of patella; no loose body felt; movements of joint free; fitted with iron and leather special knee-cap. Discharged cured 17th day.

2. *Æt.* 10. Pushed over and slipped off kerb, twisting left knee, which became flexed; attempts to extend caused severe pain; admitted at once to hospital; acute synovitis developed; subsided under treatment (rest and ice-bag); discharged cured 32nd day; able to move joint well, wearing leather knee-cap.

Ruptured internal semilunar cartilage.—Male, *æt.* 29. Under treatment for chronic gonorrhœa and stricture; twisted left knee 1 month before admission, subject to sudden pain with clicking sensation in joint since; small hard body felt to inner side of patella; incision; anterior extremity of internal semilunar cartilage missing, could not be found; wound closed with drainage-tube, iodoform gauze and salicylic wool dressing; much pain in joint; febrility and free discharge for 10 days; joint remained swollen and very painful; put up in plaster-of-Paris splints on 51st day over antiseptic mercurial dressing; 61st day wound quite healed, but joint still swollen, resembling a tubercular joint. Joint moved on 85th day; adhesions broken down; subsequent attempts to restore movement by passive motion and massage caused severe pain and return of heat and effusion; so the limb was fixed in lateral plaster-of-Paris splints in extended position.

SPECIAL TABLES.

SPECIAL TABLE I.—*Erysipelas (arising in hospital).*

No.	Age.	Sex.	Disease for which admitted.	Ward in which it arose.	Duration of residence before attack.	Probable cause of attack.	Month.	Part where eruption appeared.	Interval between probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
1	71	F.	Carcinoma of breast	Elizabeth	21 days	—	Jan.	Around wound	—	1 day	C.	Operation 17 days before ; slight redness ; no constitutional symptoms. Transferred to erysipelas ward for safety.
2	46	F.	Ditto	Alexandra	36 "	—	April	"	—	6 days	C.	
3	13 mos.	F.	Nævus of face	Victoria	10 "	Operation	Sept.	"	1 day	1 day	C.	Rash and febrile temperature on day after excision of nævus, symptoms trivial.
4	29	M.	Lipoma of buttock	Clayton	4 "	?	Feb.	"	—	2 days	C.	Very slight.
5	8	M.	Tubercular disease of knee	"	31 "	?	Nov.	"	—	15 "	R.	Erysipelas developed during irrigation of knee-joint.
6	3	M.	Ditto	Victoria	42 "	?	Dec.	Ankle	—	2 "	C.	Very slight.
7	36	M.	Ditto	Albert	97 "	?	July	Around wound (abscess incised)	—	23 "	C.	
8	19	M.	Suppur. bursal cyst, hip	"	20 "	?	Jan.	"	—	13 "	C.	Erysipelas 7 days after incision.
9	45	F.	Suppur. bursal cyst, patellæ	Alexandra	1 "	—	July	Knee	—	57 "	D.	Admitted with acute bursitis and erysipelas ; 6 months pregnant ; abortion 23rd day ; puerperal fever 27th day ; death from exhaustion 57th day.

10	8 days	F.	Spina bifida	Victoria	7 "	?	"	Back	—	1 day	D.	Admitted two hours after birth, with ulcerating spina bifida.
11	24	M.	Axillary abscess	Albert	7 "	?	"	Axilla	—	Not stated	C.	Much œdema and cellulitis before abscess opened (5 days before attack).
12	44	F.	Gluteal abscess	Elizabeth	27 "	?	"	Buttock	—	?	R.	Symptoms very slight; left hospital at own request on 3rd day after onset.
13	4 mos.	F.	Abscess near knee	Victoria	8 "	?	June	Knee	—	7 days	C.	Onset 5 days after incision of abscess.
14	24	M.	Burn of face, arm, &c.	Albert	6 "	?	April	Arm	—	16 "	C.	
15	12	M.	Scald of back, face, &c.	"	1 "	—	Oct.	Face	—	15 "	C.	
16	15	F.	Scald of face, neck, &c.	Alexandra	1 "	—	Jan.	"	—	Not stated	C.	
17	44	F.	Scalp wound	Elizabeth	5 "	—	Nov.	Wound	—	3 days	C.	
18	29	M.	Wound of forearm	Leopold	3 "	?	Aug.	Forearm	—	4 "	C.	Wound caused by dirty glass; division of tendons.
19	25	F.	Wound of wrist	Elizabeth	3 "	—	July	"	—	5 "	C.	
20	8	F.	Needle in skin near knee	"	5 "	?	April	Knee	—	3 "	C.	Very trivial symptoms.
21	47	M.	Compound fracture of leg ("Pott's")	Edward	200 "	—	Dec.	Leg	—	5 "	C.	
22	30	M.	Contused wound into knee-joint	Clayton	7 "	—	Nov.	Wound	—	10 "	C.	

128 SUMMARY.—Males 11, Females 11. *Wards*.—Edward 1 case, Leopold 1, Alexandra 3, Clayton 3, Victoria 4, Elizabeth 5, Albert 5.

Seasons.—January ... 3 }
February ... 1 } 4
March — }
April 3 }
May — } 4
June 1 }
July 6 }
August 1 } 8
September... 1 }
October 1 }
November ... 3 } 6
December ... 2 }

Cured 18. Relieved 2. Died 2.

SPECIAL TABLE II.—PYÆMIA.

A. Admitted with the disease.

1. Male, æt. 10. Admitted April 25th. Blow on knee 1 week before admission; swelling and pain soon afterwards, gradually becoming worse, and child being feverish. On admission abscess on point of bursting just below left knee; sac evidently extending into popliteal region; no affection of knee-joint; effusion in ankle-joint and both sterno-clavicular joints; indurated red lines extending along leg upwards from ankle; glands in groin enlarged; temp. 102° — 103° ; abscess over knee incised; bare bone on head of tibia at upper epiphysial line. Two days later ankle-joint incised and drained; pus found in joint, and burrowing along inner side of foot; counter-opening in sole; sterno-clavicular joints incised; pus; both cavities communicating across sternal notch; temperature fell to 99° after incision; subsequently varied between 99° and 102° for 3 or 4 weeks, there being free discharge from wounds, and pus burrowing amongst muscles of leg; small abscesses formed in the back and in each axilla; incised; after 4th week discharge gradually lessened; temperature fell to 98° and 99° ; wounds gradually healed after slight exfoliation from upper extremity of tibia. Discharged cured on 160th day (for notes of case see "acute epiphysitis" in "Diseases of Bone," index to Hospital Records).

2. Male, æt. 23. Three weeks before admission had a blow on mastoid region, which became very painful, and 1 week later purulent discharge from auditory meatus commenced (history of otorrhœa 10 years previously, which, however, had ceased for several years); 5 days before admission had a rigor, and every succeeding day up till admission, when he had a severe one (temperature up to 107°), followed by loss of consciousness; tenderness over right mastoid and down side of neck; no redness; no œdema nor swelling; temperature after rigor 100° , rising later to 104° ; trephining on day after admission; pus between lateral sinus and bone; communication established between meatus and trephine hole; syringed through with antiseptic solution; temporary improvement for 2 days, then temperature having fallen to 99° and 100° after the operation rose, and pneumonic symptoms developed, and death occurred on 9th day after operation. P.M.—Softening; thrombosis of lateral sinus extending into jugular vein; infarcts in lungs.

B. Cases arising in hospital.

1. Male, *æt.* 55. Gonorrhœa 11 years previously; stricture 12 months; perinæal abscess 8 months, which burst, leaving urinary fistula. On admission very tight stricture (No. 1); rigors after catheter; 7th day abscess over olecranon (acute suppurative periostitis) incised; bare bone; repeated rigors. Death 9th day; pyæmia. P.M.—Infarcts in lung; small perinæal abscess deep in perinæal tissues, which were much indurated.

2. Male, *æt.* 24. Varicose veins in legs; operation right leg; veins excised 34th day; no complication; left leg; veins excised 7 days later; progress favorable till 7th day after operation, when temperature rose to 104°; red lines up leg; pain in hip and knee-joints; latter swollen; rigors; hæmoptysis; abscess (superficial) on foot. Death on 72nd day. P.M.—Left lung intense congestion; right lung infarcts; no suppuration in joints; superficial abscess over manubrium.

3. Female, *æt.* 47. Chronic scirrhus right breast; 6 years' history; ulceration 7 months; glands in axilla slightly enlarged; central portion sloughed away shortly after admission, leaving large shallow ulcer with everted edges; microscopical examination showed typical scirrhus; removal of growth necessitated exposure of fascia over ribs and intercostal muscles; skin could not be brought together sufficiently to completely close wound; secondary hæmorrhage 11th day after operation; signs of pleuro-pneumonia on 15th day; abscess over sacrum 20th day; effusion into right knee-joint 22nd day, and spontaneous fracture of 3rd and 4th ribs (separation from cartilages); sank from exhaustion, and died 37th day after operation. P.M.—Necrosis of exposed ribs; right pleura obliterated; lungs congested; pons in right knee-joint and amongst muscles of thigh; no bone disease; no secondary deposits of growth found.

C. Acute bone case.

Male, *æt.* 9 months. Thigh swollen for 2 or 3 weeks after an illness described as "bronchitis, with rash on body, and sore mouth and throat." On admission no marked pain or tenderness, but a huge abscess around upper end of femur; movements of hip-joint caused no marked pain; incision; abscess found to communicate with joint; counter-opening made behind; great trochanter bare and necrosed; symptoms relieved for a few days, then chest symptoms developed. Death on 21st day. P.M.—Necrosis of trochanter; acute arthritis of hip; broncho-pneumonia; no infarcts.

SPECIAL TABLE III.—*Hernia.*—1.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	Carpenter	M.	20	R.	3 years	1 day	?
2	Pensioner	M.	64	R.	20 years	3 or 4 hours	?
3	Grocer	M.	71	L.	4 years	2 days	?
4	Clerk	M.	49	L.	15 years	"	?
5	Printer	M.	42	L.	18 years	"	?
6	Sculptor	M.	73	R.	30 years	12 hours	?
7	Carman	M.	33	R.	20 years	18 hours	?
8	Publican	M.	59	R.	35 years	A few hours	?
9	—	M.	14	R.	9 months	1 day	?
10	—	M.	1 $\frac{3}{5}$	L.	2 days	1 day	?
11	Dealer	M.	27	L.	Many years	About 6 hours	?
12	Married	F.	41	L.	18 years	1 day	?
<i>Hernio</i>							
13	Labourer	M.	51	R.	6 years	3 days	Enteroplocele
14	"	M.	34	R.	1 month	24 hours	Enterocoele
15*	—	M.	6 weeks	R.	5 hours	5 hours	"
16*	Bricklayer	M.	16	R.	2 years	4 days	Epiplotele
17*	Ivory turner	M.	59	R.	18 years	3 hours	Enteroplocele
18*	Soda-water bottler	M.	27	R.	8 years	3 hours	Enterocoele
19*	Engineer	M.	20	R.	8 hours	8 hours	Enteroplocele
20	Clerk	M.	33	L.	5 years	3 days	"

Strangulated. a. Inguinal.

Treatment.	No. of days in hospital.	Result.	Remarks.
Taxis under anæsthetic	19	C.	
Ice-bag, taxis	10	C.	
" "	13	C.	
" "	12	C.	
" "	5	C.	
" Taxis	6	C.	
Taxis under anæsthetic	8	R.	
Taxis, ice-bag	1	C.	
Reduced spontaneously	1	C.	
Taxis under anæsthetic	8	C.	
Taxis	2	C.	
Taxis, ice-bag	8	C.	
<i>tomy.</i>			
Incision; large mass of omentum; small knuckled intestine; omentum removed; stricture divided; intestine reduced; sac excised	62	C.	
Incision; very tight stricture incised; sac partially incised	33	C.	Hernia. Descended behind and upward; extension of tunica vaginalis, which was first opened and taken for the sac.
Incision; sac opened; stricture incised; intestine replaced; sac partially removed; pillars of ring approximated with kangaroo tendon	17	C.	
Incision; hydrocele found; a second sac found above it, containing small mass of strangulated omentum which, with most of sac, was removed	37	C.	Hydrocele of hernial sac and hernia.
Incision; omentum removed; stricture (high up near int. ring) divided; intestine replaced; ring closed with kangaroo-tendon sutures	21	C.	
"Congenital hernia;" tight constriction divided; intestine replaced; sac as far as possible dissected up and removed	23	C.	
"Congenital funicular hernia;" tight constriction high up; tunica vaginalis closed and distinct from hernial sac; omentum removed; intestine replaced; pillars of ring closed	80	C.	Developed a strangulated hernia on opposite side when convalescent from first; similar condition of operation, and result.
"Congenital hernia;" omentum removed; intestine replaced after division of constriction; two strong catgut sutures in external ring	47	C.	Constriction at external ring.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
21	Clerk	M.	22	L.	3 years	2 days	Enteropiplocele Cæcum and vermiform appendix (though on left side) Enteropiplocele
22	—	M.	4 months	L.	1 month	4 days	
23	Carman	M.	16	R.	Some years	12 hours	Enteropiplocele
24	Caretaker	M.	46	R.	2 days	2 days	Enterocoele
25	—	M.	3 weeks	R.	1 day	1 day	„
26	Grocer	M.	55	R.	3 years	30 hours	„
27	—	M.	35	R.	Many years	2 or 3 days	„
28	—	M.	34	R.	6 years	1 day	Enteropiplocele
29	—	M.	69	L.	Many years	2 days	„

Treatment.	No. of days in hospital.	Result.	Remarks.
Omentum removed; intestine replaced after division of constriction	19	C.	Constriction at internal ring; peritoneal investment complete.
Incision; reduction easy after opening sac	2	D.	P.M.—Tip of cæcum very dark from congestion; no peritonitis; no obvious cause for death.
Omentum removed; intestine replaced after division of very tight stricture about internal abdominal ring; sac ligatured; ring sutured with kangaroo tendon	19	C.	
Division of constriction; reduction of knuckle of intestine, which was very much congested, but polish not lost; sac dissected out and removed	3	D.	Constriction very high up, and very tight. P.M.—No peritonitis; no perforation.
Incision in gut very deeply congested; peritoneal coat gave way during gentle manipulation; constriction divided, but intestine left at opening	5	D.	Prolapse of intestine occurred twice after operation; replaced. P.M.—Peritonitis, no perforation of gut.
Incision; division of constriction; resection of 12 inches of small intestine; artificial anus	124	D.	Double perforation of gut at both points of constriction of strangulated bowel; free evacuation through artificial anus, but much trouble from excoriation from self-digestion of parts around opening; 5 months later attempt to re-unite bowel (after failure of attempts to induce passage of fæces into lower portion of bowel in wound) proved fatal from shock.
Incision; constriction high up; intestine adherent and ulcerated, during dissection of which vas deferens divided; testis removed; intestine replaced; sac excised; three hours later free liquid faecal discharge; wound opened up, perforation found; resection of bowel and Senn's enterorrhaphy performed	1	D.	P.M.—Acute peritonitis; death 11 hours after 2nd operation.
Incision into sac; part of strangulated omentum removed; intestine replaced after division of two constricting rings; sac drawn together into a mass by suture and left in inguinal ring, which was not closed by suture; external wound closed	44	C.	
Incision; sac removed with adherent omentum; constricting ring (partly formed by omentum); divided intestine replaced; neck of sac ligatured; external wound closed	2	D.	Large mass of adherent omentum enclosing knuckle of intestine, very tightly nipped; very dark but not gangrenous.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
30	Labourer	M.	23	L.	1 month	3 or 4 days	Enterocoele of "congenital" kind
31	—	M.	3 weeks	R.	1 day	1 day	„
32	—	M.	49	R.	Many years	Not stated	Enterocoele
33	Laundress	F.	28	L.	1 day	1 day	Enteropiplocele with Fallopian tube and ovary

b. Fe

34	—	F.	34	R.	Several years	1 day	?
35	—	F.	59	R.	17 years	1 day	?

Hernio

36	Journalist	M.	54	R.	15 years	3 days	Enteropiplocele
37	Horsekeeper	M.	52	R.	20 years	2 hours	„
38	Butler	M.	64	L.	2 days	2 days	Enterocoele
39	Labourer	M.	65	L.	2 years	4 days	„
40	—	F.	64	R.	2 years	4 days	Enteropiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Incision; sac laid open; tight constriction high up in inguinal canal divided; intestine replaced; tunica vaginalis closed with suture	34	C.	For some days after operation temperature remained high without cause being found in hernial wound. Eventually small perineal abscess discovered; incised; no further complication.
Incision; division of constriction at external inguinal ring; intestine replaced; sac not removed; wound sutured	18	C.	"Congenital hernia."
Incision; constriction divided; intestine replaced	4	D.	Peritonitis at post-mortem; at several points intestine deeply congested and collapsed; no perforation; no gangrene of gut.
Incision; constriction at internal inguinal ring divided; intestine replaced; sac dissected out, ligatured, and removed, together with Fallopian tube and ovary	42	C.	

moral.

Ice-bag; taxis	7	C.	Fitted with truss.
" "	7	C.	"

tomy.

Incision; gut "yellow and black" in colour, enclosed in mass of omentum; constriction divided; omentum ligatured and removed; intestine replaced; sac ligatured	2	D.	P.M.—Gangrene of bowel; acute peritonitis.
Incision; intestine dark and showing marks of tight constriction distinctly replaced after division of constricting ring; omentum ligatured and removed; sac dissected out, ligatured, and removed	26	C.	Encysted hydrocele (milky fluid) present, tapped before herniotomy.
Incision; constriction divided; knuckle of congested intestine replaced; sac excised	21	C.	Had a left inguinal hernia 59 years, easily reducible.
Incision; knuckle of partially adherent intestine liberated and reduced; very slight sign of congestion; sac excised	21	C.	
Incision; constriction divided; intestine replaced; omentum ligatured and removed; sac excised	22	C.	

No.	Occupation.	Sex.	Age.	Side	Duration of hernia.	Duration of strangulation.	Structure of hernia.
41	Married	F.	38	R.	Several years	1 day	Entero-epiplocele
42	—	F.	28	L.	5 years	1 day	„
43	—	F.	66	R.	Many years	“4 or 5 days”	„
44	—	F.	58	R.	(20 years) 2 years (see Remarks)	1 day	„
45	—	F.	67	R.	10 years	4 days	„
46	—	F.	70	Not stated	9 days ?	7 days	Enterocoele
47	—	F.	56	L.	6 days	2 days	Entero-epiplocele
48	—	F.	59	R.	17 years	5 or 6 days	Enterocoele
49	—	F.	53	R.	10 years	1 day	Entero-epiplocele
50	—	F.	35	R.	4 months	3 days	Enterocoele
51	—	F.	32	L.	18 months	1 day	Epiplocele
52	—	F.	37	L.	4 months	2 or 3 days	Fallopian tubes
53	—	F.	52	—	14 years	3 days	Entero-epiplocele
54	Laundress	F.	70	R.	14 days	4 days ?	Littre's hernia (enterocoele)
55	—	F.	73	R.	2 years	3 days	Entero-epiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Incision; constriction divided; intestine replaced; omentum ligatured and removed; sac excised	20	C.	Sac much thickened.
Incision; constriction divided; intestine replaced; adherent omentum with sac ligatured and removed; counter opening for drainage made over extension of sac up towards Poupart's ligament; small omental hernia found on right side; omentum of sac removed	21	C.	
Incision; constriction divided; intestine replaced; omentum ligatured and removed with sac	15	C.	
Ditto	21	C.	Hernia on left side also 12 years; "radical cure" operation on both 5 years ago; left cured; right reappeared 2 years ago.
Ditto	27	C.	
Incision; constriction divided; bowel replaced; sac excised	3	D.	Intestine very deeply congested at operation; patient never rallied; no P.M.
Operation as in case of No. 43, &c.	17	C.	Old hernia (cured) on right side.
Incision; adherent large intestine liberated and reduced	32	C.	Large intestine in sac; only partial strangulation; same case as No. 35 above.
Operation as in No. 43, &c., above	29	C.	
Operation as in No. 46	13	C.	"Littre's hernia;" knuckle of intestine did not consist of whole circumference of gut.
Incision; small piece of congested omentum ligatured and removed with sac	10	C.	No intestine in sac at operation; simply omentum, fluid, and two curious cystic bodies of the size of peas, possibly detached cystic portions of omentum; not hydatid.
Incision; Fallopian tube removed with some fat omentum, and sac excised	33	C.	Parametritis after operation.
Operation as in No. 43, above	18	C.	
Incision; excision of sac and contents (the pedicle of the sac was found to include a tubular process of mucous membrane)	32	C.	The hernial sac was full of fæces at operation, evidently there had been a small portion of strangulated bowel which had sloughed, forming a fæcal fistula into the hernial sac.
Operation as in Case No. 43, above	3	D.	P.M.—Peritonitis; strangulated portion of intestine, 5 inches long, collapsed; peritoneal covering ragged and torn.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
56	—	F.	66	L.	9 months	3 or 4 days	Enterocoele
57	Publican	M.	62	—	20 years	4 days	<i>c. Um</i> Enteroplocele
58	—	F.	30	—	3 years	2 days	Enteroplocele (2 sacs)

2. Hernia not Strangulated.—a. In

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Reduceible or irreducible.	Nature of hernia.
1	Baker	M.	20	R.	6 years	Reduceible	? Sac empty at operation
2	—	M.	10 months	R.	Congenital	„	Funicular ? contents
3	—	M.	19	R.	„	„	Enterocoele
4	School	M.	13	R.	5 years	„	?
5	„	M.	11	R.	3 years	„	Enterocoele
6	Labourer	M.	18	R.	10 years	„	Epiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Incision; after removal of considerable amount of coagulated blood which surrounded knuckle of intestine, latter was reduced without much difficulty; sac ligatured and part removed	52	C.	Some suppuration from decomposition of extravasated blood, not entirely removable at operation.
<i>bilical.</i>			
Incision; constriction in neck of sac (partly formed by adherent omentum) divided above and below; intestine replaced; omentum and sac excised after ligature	4	D.	Suppression of urine for 2 days after operation. P.M.—Acute peritonitis; no perforation of gut, nor definite sloughing, but congestion had evidently been very intense.
Double sac; small portion of adherent omentum removed from 1st sac; knuckle of intestine in 2nd incision of constricting ring above; replacement of intestine; fascial opening and external wound both closed by suture (radical cure)	18	C.	

guinal. Operations for Radical Cure.

Treatment.	No. of days in hospital.	Result.	Remarks.
Incision; sac exposed; pillars of ring approximated by kangaroo tendon	42	C.	Subject to epileptic fits; patient re-admitted later (see 1890) with return of the hernia.
Incision; sac dissected out (including portion reflected over spermatic cord), and drawn up into inguinal ring by suture; pillars of ring approximated with kangaroo-tendon sutures	26	C.	
Incision; sac dissected out and removed; pillars of ring approximated; drain-tube passed downwards through counter opening in bottom of scrotum	43	C.	Testis not descended, not seen; but sac extended to bottom of scrotum.
Incision down on to neck of sac; latter not opened nor removed; pillars of ring approximated	16	C.	Both testes undescended; left only felt, close to external abdominal ring in inguinal canal
Sac excised; pillars of ring approximated; a small portion of spermatic flexus excised	39	C.	
Omentum removed after ligature of pedicle; sac dissected up, drawn together by sutures and left; redundant skin of scrotum removed; wound closed	21	C.	Slight varicocele also present; not interfered with.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Reducible or irreducible.	Nature of hernia.
7	Waiter	M.	17	L.	Congenital	Reducible	Contents not seen at operation
8	—	M.	1	R.	„	„	„
9	Carman	M.	30	R.	8 years	Irreducible	Epiplocele
10	—	M.	16 months	L.	Congenital	Reducible	Enterocoele
11	Butler	M.	26	L.	„	„	„
12	Labourer	M.	49	R.	3 years	„	? Sac empty at operation
13	Carman	M.	26	R.	10 years	Irreducible	Enterocoele
14	Newsvendor	M.	70	R.	4 years	„	Omentum and vermiform appendix
15	—	M.	14	R.	5 years	Irreducible	Epiplocele
16	Printer	M.	20	L.	Congenital	„	„
17	Barman	M.	35	R.	12 years	„	Enteropiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Sac excised; neck ligatured; varicocele excised	26	C.	Descent of testis incomplete.
Upper portion of sac excised; lower part left to form tunica vaginalis; pillars of ring approximated with kangaroo tendon	18	C.	
Omentum (partially adherent) removed; sac dissected out; neck ligatured; inguinal ring closed with kangaroo-tendon suture	28	C.	
Neck of sac and portion below dissected off; spermatic cord ligatured and removed; lowest portion left to form tunica vaginalis; external ring closed by catgut suture	26	C.	Scarlatina before operation.
Undescended testis found enclosed in distinct sac not communicating with peritoneal cavity, removed; sac of hernia behind excised with much difficulty from abnormal epigastric artery passing over it	25	C.	Patient developed parotitis on 3rd day after operation.
Sac excised; pillars of ring approximated with kangaroo tendon	22	C.	
Coils of adherent intestines liberated and reduced; sac dissected out and excised	27	C.	
1st operation.—Incision; cavity of sac apparently filled with suppurating omental tissues with faecal odour	46	C.	(from 1st operation)
2nd operation.—Incision; vermiform appendix, perforated near its tip, found to pass into centre of suppurating mass; end removed; orifice closed by modified Lembert's suture; inguinal ring closed with catgut suture			
Omentum ligatured and removed; sac drawn together and fixed by a suture into inguinal ring, which was also closed by catgut suture	17	C.	
Omentum ligatured and removed; sac dissected up from spermatic cord, and upper portion and neck drawn together into inguinal ring, which was closed with kangaroo tendon	12	C.	
Omentum (adherent) removed with part of thickened sac; ring closed with catgut suture	59	C.	Some suppuration of wound.

Cases not

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Reducible or irreducible.	Nature of hernia.
18	Labourer	M.	59	R. & L.	12 years	Reducible	?
19	Nil	M.	69	L.	12 years	"	?
20	Sailor	M.	18	R. & L.	14 months	"	?
21	—	M.	63	R. & L.	?	"	?
22	Sweep	M.	20	R. & L.	8 days (?)	"	?
23	—	M.	12	L.	3 months	"	?
24	Labourer	M.	59	R.	12 years	"	?
25	—	M.	40	R.	15 years	"	?
26	Teacher	M.	18	L.	7 years	"	?
27	Gasfitter	M.	52	L.	6 months	Irreducible	?
28	Carman	M.	41	L.	14 years	"	?
29	Lampman	M.	60	L.	9 years	"	?
30	—	F.	19	R.	"Many years"	Reducible	?

b. Femoral.—Operations

31	—	F.	19	R.	1 month	Reducible	?
32	Married	F.	49	R.	8 or 9 years	Irreducible	Epiplocele

Cases not

33	Coal porter	M.	39	R.	8 months	"	?
34	French polisher	M.	69	L.	30 years	Reducible	?

c. Umbilical

35	Railway guard	M.	39	—	4 months	Irreducible	Epiplocele
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Operated upon.

Treatment.	No. of days in hospital.	Result.	Remarks.
Fitted with truss	43	R.	P.M.—Gastritis, congestion of lungs; nothing pathological connected with herniæ.
Went out at own request	10	R.	
Dying on admission	13	U.	
	1	D.	
Fitted with truss	8	R.	Superficial ulceration of scrotum.
"	3	R.	
Hydrocele present tapped; truss	15	R.	
No operation on account of phthisis	3	U.	
No operation considered advisable	7	U.	
"	2	U.	
"	19	R.	
Ice-bag	16	R.	
Truss	2	R.	

for Radical Cure.

Excision of sac	24	C.	Sac empty at operation.
Adherent omentum removed; sac excised	17	C.	

Operated upon.

Operation unadvisable (cardiac disease); truss	11	R.
Truss	28	R.

Hernia.

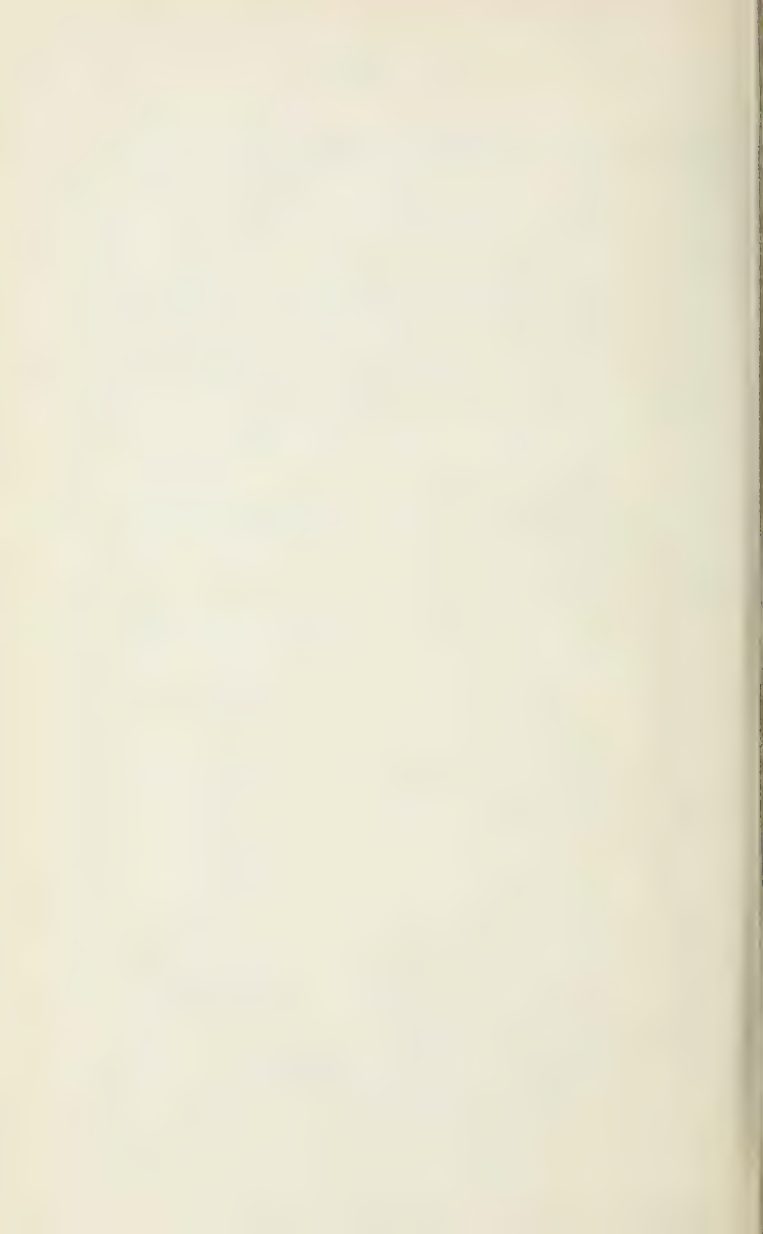
Removal of sac and adherent omentum; neck of sac closed by sutures	19	C.
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SPECIAL TABLE IV.—*Fractures and Dislocations treated*

BONE.	Sex.		Age.									
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Not stated.	
DISLOCATIONS.												
Scapula	1	...	...	...	...	1	...	...	...	...	...	
Humerus	30	13	...	...	1	3	6	7	9	13	4	
Radius and ulna	16	4	...	5	12	...	2	...	...	...	...	
Ulna	...	1	...	...	...	...	1	...	...	...	...	
Thumb.—First phalanx	2	...	...	...	...	2	...	...	...	...	...	
" Ungual phalanx	2	1	...	...	...	...	2	1	...	...	...	
Finger	2	1	...	1	...	2	...	...	...	...	...	
FRACTURES.												
Maxilla	3	2	...	...	1	2	...	1	1	...	...	
Ribs	51	27	...	2	3	12	17	21	18	4	1	
Scapula.—Body	2	...	...	...	...	2	...	...	...	...	...	
" Neck	1	...	...	...	...	...	...	1	...	...	...	
" Acromion	2	...	...	...	...	1	...	1	...	...	...	
Clavicle	46	34	30	13	5	13	6	5	4	4	...	
Humerus.—Anatomical neck	1	2	...	...	...	...	...	...	2	1	...	
" Surgical neck	5	4	...	1	2	1	...	1	...	4	...	
" Shaft	7	1	...	3	1	4	...	...	...	...	...	
" Lower extremity	12	4	3	6	7	...	...	...	...	...	...	
" Separ. of epiphysis	1	1	2	...	...	...	...	...	...	...	...	
Radius.—Upper third	2	8	5	1	3	1	...	...	...	...	...	
" Middle third	12	5	5	3	1	4	1	1	1	...	1	
" Lower third	24	40	...	...	14	4	10	6	16	12	2	
" Separ. of epiphysis	7	3	5	3	2	...	...	...	...	...	...	
" Not stated	1	1	...	...	2	...	...	...	...	...	...	
Ulna.—Olecranon	9	...	1	...	...	4	1	1	...	...	2	
" Shaft, upper third	2	...	...	1	1	...	...	...	...	...	...	
" " middle third	4	...	...	2	2	...	...	...	...	...	...	
" " lower third	...	2	1	...	1	...	...	...	...	...	...	
" Separ. of epiphysis	1	...	...	1	...	...	...	...	...	...	...	
" Not stated	1	1	...	1	1	...	...	...	...	...	...	
Radius and ulna.—												
Fracture	35	8	4	9	21	2	...	1	2	3	...	
Separ. of epiphysis	...	2	1	1	...	...	...	...	...	...	...	
Metacarpus	20	7	1	...	3	10	7	4	2	...	...	
Phalanges	25	4	...	2	9	7	5	3	1	2	...	
Femur	...	1	1	...	...	...	...	...	...	...	...	
Tibia and fibula	1	...	...	...	...	...	...	...	1	...	...	
Tibia	5	1	...	3	1	1	...	1	...	...	...	
Fibula	16	3	2	...	1	4	6	4	1	...	1	
Foot.—Metatarsus	9	1	...	...	2	4	2	1	...	...	1	
" Phalanges	5	1	...	...	2	2	2	...	...	...	...	

in Casualty Department not admitted to Wards.

Side of body.			Remarks.
R.	L.	N. S.	
1	...	...	Dislocation inwards and downwards at acromial clavicular joint.
24	19	...	Subcoracoid 28; subglenoid 11; subclavicular 2; not stated 2. All reduced by manipulation.
9	9	2	"Both bones backwards" 6 (in 1 also separation of upper epiphysis of radius); "backwards and outwards" 6; "outwards" 8 (in 6 of these fractures of internal condyle of humerus also).
1	...	...	"Backwards" + fracture of neck of radius.
1	1	...	Dislocation backwards; reduced by manipulation.
1	1	1	1 compound.
2	1	...	1 compound, at interphalangeal joint.
3	2	...	Horizontal ramus in all; in 1 also fracture near symphysis.
34	37	7	1st rib 1; 2nd 1; 3rd 1; 4th 1; 5th 5; 6th 8; 7th 22; 8th 17; 9th 16; 10th 9; 11th 4; 12th 3.
1	...	1	Direct violence in both.
1	...	...	Fall on shoulder.
2	...	...	
33	38	9	Position of fracture: close to sternal end 1; inner third 4; middle third 11; outer third 25; acromial end 3; in remainder not stated.
...	3	...	
4	4	1	
5	3	...	
6	9	1	T-fracture 4; detached internal condyle 3; do. external condyle 1; comminuted 1.
1	1	...	Lower epiphysis 1.
6	4	...	
9	5	3	"Greenstick" fracture 3.
32	25	7	Non-impacted 7; impacted 8; 1 double "Colles."
5	5	...	Upper epiphysis 4; lower epiphysis 5; not stated 1.
...	2	...	(No note of position of fracture.)
4	4	2	
1	1	...	
4	...	...	"Greenstick" 2.
1	1	...	
1	...	...	Lower epiphysis 1.
1	1	...	
18	23	2	"Greenstick" 9; upper third of bones 2; middle 14; lower 7.
2	...	...	Lower epiphysis 2.
19	6	2	1st metacarpal 6; 2nd 6; 3rd 5; 4th 4; 5th 4; not stated 2.
10	18	1	Thumb 7; index finger 6; 2nd do. 5; 3rd 5; 4th 5; compound 5.
1	...	...	
1	...	...	Position of fracture not stated.
3	1	2	Middle third 2; lower third 4.
7	11	1	Upper third 1; lower third 15; external malleolus 3.
4	6	...	1st 3; 2nd 3; 3rd 2; 4th 3; 5th 2.
2	4	...	Great toe 5; 2nd 1; 3rd 1; 5th 1.



STATISTICAL REPORT
OF
THE OPHTHALMIC DEPARTMENT
FOR THE YEAR 1889.

BY W. G. LAWS, M.B., C.M.,
LATE OPHTHALMIC CLINICAL ASSISTANT.

DURING the year there were 4308 new out-patients (exclusive of renewed letters). 270 in-patients were admitted, and 276 major operations were performed.

Table of In-patients.

Cataract, senile	31	Corneal ulcers:	
„ traumatic	2	Hypopyon, suppurating, traumatic, and serpiginous	11
„ lamellar	7	Chronic, relapsing, &c.	25
„ congenital	2	Conical cornea	3
„ soft	2	Adherent leucoma	1
Membrane after extraction	5	Injury to optic nerve	1
Glaucoma, acute	1	Papillitis	2
„ subacute	4	Primary atrophy	4
„ chronic	13	Retinitis, syphilitica	1
„ absolute	1	„ pigmentosa	1
Aniridia	2	„ proliferans	1
Cyst of iris	1	Detachment of retina	5
Iritis, syphilitic	2	Embolism of central artery	1
„ relapsing	5	Glioma of retina	2
„ gonorrhœal rheumatic	1	Paralysis of ocular muscles	2
„ sero-plastic	2	Congenital ptosis	1
Irido-cyclitis	1	Strabismus, convergent	13
Sympathetic inflammation	1	„ divergent	7
Choroiditis	6	Conjunctivitis	3
Sclero-keratitis	1	Syphilitic ulcer of conjunctiva	1
Keratitis (hereditary syphilitic)	14		

Granular lids and pannus	5	Periostitis of orbit	4
Trichiasis, entropion, ectropion	11	Foreign body in orbit	1
Blepharitis	1	Orbital tumour	2
Ophthalmia, purulent	5	Intra-ocular tumour	2
Lacrimal obstruction	8	Dermoid cyst	2
Wounds of eyeball	17	Rodent ulcer	1
Blow on eye	5		
Lost eyes	16		270
Abscess of lid	1		

The following is a list of the chief operations performed :

(The figures refer to the number of eyes.)

Removal of cataract :		Panas's operation for congenital	
Extraction	33	ptosis	2
Curette	7	For entropion :	
Needling of congenital cataract	9	Streatfeild's	2
.. traumatic cataract	4	Van Millingen's	1
Dissection after extraction	18	Arlt's	2
Removal of membrane with for-		Division of muscle of Riolanus	1
ceps	2	For ectropion :	
Iridectomy :		Subcutaneous division of scar	2
For glaucoma, acute	2	Cauterisation of conjunctiva	2
„ „ subacute	3	Excision of eye	42
„ „ chronic	13	„ with insertion of	
Preliminary to cataract extrac-		glass globe in Tenon's capsule	2
tion	1	Blepharorrhaphy	2
For prolapse of iris	7	Canthoplasty	2
„ relapsing iritis	3	For lacrimal obstruction	27
„ artificial pupil	7	Cautery to corneal ulcer	6
„ anterior synechia	2	„ to conical cornea	5
Iritomy (external)	3	„ to lids for trachoma	5
Iridotomy	1	Tattooing cornea	1
Removal of cyst of iris	1	Removal of chip from vitreous	
Sclerotomy	1	with magnet	1
Tenotomy of internal rectus :		Removal of foreign body from iris	2
Critchett's	20	Electrolysis of lashes	5
Liebreich's	2	Extirpation of lashes	2
Graefe's	4	Excision of dermoid cyst	2
Tenotomy of external rectus	2	For rodent ulcer	3
Advancement of internal rectus	9	For necrosis of orbit	1
„ external rectus	2		

*Analysis of Cataract Operations.***I.—Extraction of hard cataract—29.**

The section was made upwards in all cases, except No. 27. In this case it was made downwards, a previous operation having left a scar with adherent iris at upper part of cornea.

Iridectomy was done at the time of operation in all Mr. Lawford's cases (7), and in the first 6 of Mr. Nettleship's. It was also done in one of Mr. Nettleship's subsequent cases owing to bleeding into the anterior chamber at the time of operation, and in one a preliminary iridectomy had been performed.

In Mr. Nettleship's remaining 14 cases the lens was extracted without iridectomy. In two, however, the iris was cut in making the corneal section, and the loose portion removed. In one case prolapse of the iris occurred after the operation, and was removed on the seventh day; and in one the iris was incarcerated in the wound, and iritis occurred nine months after the operation. In the remainder there was no special complication, and iritis did not appear to be more frequent than after extraction with iridectomy.

In the cases of extraction without iridectomy eserine solution was dropped into the eye on completion of the operation.

In all cases the use of atropine was begun on the third day after operation.

The anæsthetic used in all cases was a fresh 2 per cent. solution of hydrochlorate of cocain prepared with recently-boiled water.

II.—Operations for removal of soft cataract—12.

The incision was made with a keratome in 7 cases, Taylor's knife in 3, Graefe's knife in 2. The lens matter was removed by curette in 9 cases, by suction in 1, and by cannula forceps in 1 case.

TABLE I.—*Extractions of Hard Cataract—
Mr. Nettleship's Cases (22).*

Page in B. 89.	No. Report	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
1	1	E. C. Jan. 8th	M.	70	Cocain	Right; extraction up, with iridectomy; cortex cruelly; nucleus hard, semi-Morgagnian; all lens matter removed, and pupil left black; iris cut by knife, and only this (rather small) piece removed	Favorable; one adhesion	None	May 7th— + 9 D. = $\frac{6}{12}$ partly. + 1 Dc. = $\frac{6}{12}$ partly. + 13 D. = 1 J. + 1 Dc.
20	2	W. G. Feb. 12th	M.	75	"	Left; extraction up, with iridectomy; peripheral section of capsule with cystitome; lens came out entire, amber coloured, with some denser spots and striae	Favorable	None	April 30th— + 12 D. = $\frac{6}{12}$. + 15 D. = 1 J. at 8½ in.
43	3	E. A. April 2nd	M.	63	"	Right; extraction up, with iridectomy; cortex fluid; large solid nucleus came out with some difficulty; some soft matter squeezed out afterwards; some bleeding into anterior chamber	Favorable; blood in pupil; one adhesion	None	July 2nd— + 9 D. = $\frac{6}{12}$ partly. + 3 Dc. = $\frac{6}{12}$ partly. + 13 D. = 2 J. + 3 Dc.
57	4	J. H. May 14th	M.	49	"	Right; extraction up, with iridectomy; not much lens matter left	Favorable	None	No note of vision.
67	5	A. H. May 21st	F.	78	"	Right; extraction up, with iridectomy; incision made with keratome; patient deaf, seemed about to be restless; section finished in cornea (with secondary knife), and rest of operation completed without speculum; lens very hard and large; a little lens matter left behind upper lip of wound	Favorable; membrane in pupil	August 16th— Needled; one needle. April 22nd, 1890— Needled again	Oct. 8th (before needling)— + 13 D. = $\frac{6}{12}$. + 16 D. = 6 J.

79	6	J. S. June 7th	M. 65	"	Right; extraction up, with iridectomy; lens hard, probably some cortex left	Favorable; pain and congestion for some days; no evidence of iritis	None	Nov. 19th— + 10 D. = $\frac{6}{18}$. + 25 Dc. + 16 D. = 2 J. + 25 Dc.
87	7	P. W. June 14th	M. 62	"	Right; extraction up, without iridectomy; lens rather soft, not much more than nucleus removed; pupil left circular	Favorable; pupil adherent to membrane	Aug. 8th, '90— Needled; two needles	July 24th, 1890— (before needling) + 10 D. = $\frac{9}{16}$. + 18 D. = 1 J. at 6 in.
77	8	J. D. June 18th	F. 62	"	Right; extraction up; iris cut with knife, and loose piece removed from anterior chamber with forceps after removal of lens; soft lens matter left behind; patient diabetic	Slow iritis; iris tissue included in inner part of wound	Jan. 10th, '90— Iridectomy and removal of capsule	Vision not ascertained.
90	9	M. C. July 2nd	F. 75	"	Right; extraction up, without iridectomy; cornea very thin; iris began to bleed after introduction of cystome; after removal of lens iris forceps introduced, and some clot removed; much blood left in anterior chamber	July 9th—Iris prolapsed	July 9th—Chloroform; prolapse removed. Sept. 27th—Artificial pupil downwards	Oct. 14th— + 9 D. = $\frac{6}{10}$; (Mittellate).
103	10	E. G. July 5th	F. 55	"	Right; extraction up, without iridectomy; lens very soft; a good deal of soft matter squeezed out, some left behind; pupil left central	Favorable; no iritis	Feb. 18th, '90— Needled; one needle	Oct. 24th— (before needling) + 12 D. = $\frac{6}{12}$. + 2 Dc.
104	11	B. N. July 5th	F. 58	"	Right; extraction up, without iridectomy; lens hard; iris a little drawn up, and pupil not left central	Iris incarcerated in wound; remained quiet till May, 1890, then iritis, followed by diminished tension	None	Oct. 3rd— + 8 D. = $\frac{6}{12}$ partly. + 11 D. = 1 J.

Page in B. 89.	Report	Name and date.	Sex.	Age.	Anesthetic.	Operation.	Progress of case.	Secondary operation.	Result.
109	12	J. S. July 12th	M.	49	Cocain	Left; extraction up; iris cut near ciliary margin in making section; the loose piece removed with forceps; lens came through button hole thus produced; lens moderately hard; most of it came away; pupil left not quite central	Favorable; no iritis	None	Oct. 10th— + 13 D. = $\frac{6}{18}$. + 15 Dc. + 16 D. = 1 J.
126	13	J. G. Aug. 16th	F.	63	"	Right; extraction up without iridectomy; cataract spermaceti, some semi-clear cortex; a good deal of soft matter came away with nucleus, but an attempt to get away the remainder failed, it would not come past edge of iris	Favorable; membrane in pupil; and some adhesion of iris	Sept. 27th— Needed, one needle	Nov. 5th— + 12 D. = $\frac{6}{18}$. + 25 Dc. + 16 D. = 1 J. + 25 Dc.
131	14	M. S. Aug. 23rd	F.	79	"	Left; extraction up without iridectomy; eye deep and section rather difficult, but no complication	Favorable; one or two synechiae	Dec. 13th— Needed, one needle	Dec. 5th— (before needling) + 10 D = $\frac{6}{18}$. + 15 D. = 10 J.
136	15	L. B. Aug. 27th	F.	73	"	Right; extraction up with iridectomy; incision large and not quite regular; iridectomy done after opening capsule, because there was bleeding into anterior chamber; lens over-ripe, hard, specky; came out clean	Favorable; one or two synechiae	None	Sept. 19th— + 11 D. = $\frac{6}{18}$. + 16 D. = 1 J.
137	16	J. P. Aug. 27th	M.	58	"	Left; extraction up without iridectomy; lens cortex semi-fluid, with fibrous strands; small hard nucleus; came out well; pupil left black and central	Favorable; one synechia	None	Sept. 25th— + 9 D. = $\frac{6}{18}$. + 2 Dc. + 13 D. = 1 J. + 2 Dc.

146	17	E. L. Sept. 27th	F. 40	"	Left; extraction up without iridectomy; patient restless and jerky; operation difficult; iris slightly notched up and out in making section; lens fairly hard, some soft matter squeezed out afterwards; iris a good deal manipulated; pupil left fairly central	Favorable; pupil drawn up, but no prolapse or adhesion	None	Nov. 12th— + 12 D. = $\frac{6}{18}$. + 2 Dc. + 15 D. = 1 J. badly. + 2 Dc.
166	18	E. W. Oct. 18th	M. 77	"	Left; extraction up; preliminary iridectomy in 1884; lens fairly hard, some soft matter afterwards removed by massage; patient blinked a good deal during operation	Favorable; a good deal of membrane; no iritis	March 7th, '90— Needled, one needle	April 11th, 1890— + 12 D. = $\frac{6}{18}$. + 2 Dc. + 16 D. = 1 J. + 2 Dc.
131	19	M. S. Oct. 18th	F. 79	"	Right; extraction up without iridectomy; patient very fidgetty; lens hard and over-ripe, came out well; pupil left nearly central	Favorable; no iritis	None	Dec. 5th— + 10 D. = $\frac{6}{34}$. + 15 D. = 10 J.
167	20	M. D. Oct. 18th	F. 63	"	Right; extraction up without iridectomy; iris notched in making section; lens rather soft; some lens matter left behind; pupil left nearly central	Favorable; much opaque matter in pupil, and some synechiae	None	Nov. 7th— Did well, but did not return for glasses.
185	21	W. W. Nov. 15th	M. 72	"	Left; extraction up without iridectomy; section almost entirely correct; cystitome used freely, but capsule not ruptured; lens shot out enclosed in its capsule; nucleus hard and brown, cortex milky; pupil left central	Favorable; no iritis	None	May 8th, 1890— + 11 D. = $\frac{6}{18}$ partly. + 14 D. = 1 J.
188	22	H. E. Nov. 22nd	M. 69	"	Left; extraction up without iridectomy; soft cortex, a good deal of which was left; patient very jerky, twitching of lids caused flap to turn over during operation; pupil left central	Nov. 25th— Large prolapse of iris	Nov. 26th— Prolapse removed under chloroform. July 11th, '90— Iridotomy	Sept. 30th, 1890— + 10 D. = $\frac{6}{18}$ partly. + 1 Dc. + 16 D. = 1 J. at 6 in. + 1 Dc.

Mr. Lawford's Cases (7).

Page in B. 89.	Report No.	Name and date.	Sex.	Op. Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
12	23	T. H. March 15th	M.	61	Cocain	Left; extraction up with iridectomy; puncture at sclero-corneal junction, counter-puncture a little more peripheral; iridectomy ragged and oblique (patient stirred); lens glutinous, and came out unwillingly; a little soft cortex removed subsequently; patient alcoholic	Suppuration of wound began on second day	Sept. 9th— Counts fingers at 3 feet
22	24	J. B. April 26th	M.	50	"	Left; extraction up with iridectomy; incision at sclero-corneal junction, at puncture and counter-puncture, but rather corneal at top; lens sticky, some soft matter extruded afterwards by pressure with fingers; cornea flaccid and became very concave after removal of lens; a little grey opacity left in pupil	None	Nov. 18th— + 11 D. = $\frac{3}{8}$ J. + 16 D. = 12 J.
23	25	E. B. April 30th	F.	70	"	Right; extraction up; after iridectomy and opening of capsule had been effected, very light pressure at lower part to extrude lens resulted in rupture of suspensory ligament at upper part and escape of a considerable quantity of clear vitreous, the lens remaining <i>in situ</i> ; its removal by scoop was easily effected, but not until much vitreous had been lost	Wound did not close; chemosis and swelling of lids	On section, extensive sub-choroidal hemorrhage found.
29	26	J. F. May 14th	M.	66	"	Left; extraction up with iridectomy; nucleus fairly hard, much soft matter squeezed out, pupil left nearly black	Favorable; no iritis	July 15th— + 10 D. = $\frac{6}{18}$ J. + 15 D. = 1 J.

40	27	M. K. July 30th	F. 63	"	Left; extraction downwards with iridectomy; when capsule was opened some soft opaque lens matter escaped, and the greater part of the lens was extruded in fragments by pressure; a further attempt to coax out lens matter caused the vitreous to present; an imperfect iridectomy upwards had been done two years before, probably for glaucoma; the iris was adherent to the scar	Favorable	Sept. 18th— Incision with keratome at inner side; a portion of iris got away; then membrane cut transversely with shears	Oct. 8th— Counts fingers at 3 feet.
46	28	R. D. Aug. 23rd	M. 59	"	Left; extraction up with iridectomy; lens came out reluctantly, but fairly complete; a patch of opacity on anterior layer of capsule would not come away	Some synechiae formed. Oct. 4th—Congestion, pain, T + 1; gradually became quiet	None	Sept. 9th— + 10 D. = $\frac{6}{34}$. + 14 D. = 10 J.
65	29	C. P. Dec. 6th	M. 70	"	Right; extraction up; patient unsteady, iris wounded in making section; iridectomy; speculum removed, lens extruded by finger pressure; much soft cortex; an attempt to dislodge this caused escape of some clear vitreous; manipulation abandoned; vitreous cut off	Plastic iritis	Feb. 21st, '90— Iridectomy downwards for new pupil	June 25th, 1890— + 14 D. = 20 J. To have further operation.

TABLE II.—Soft Cataracts—

Mr. Nettleship's Cases (5).

21	30	C. W. Feb. 19th	M. 6	Ether	Right; incision with keratome up and in; a good deal of lens removed by curette, but much was still clear and sticky, and not got out; needed Feb. 15th; lamellar	Favorable; capsule adherent to wound	None	Jan. 10th, 1890— + 12 D. = $\frac{5}{32}$. + 15 D. = 6 J.
----	----	--------------------	------	-------	---	--------------------------------------	------	--

Page in B. 89.	Report	Name and date.	Sex.	anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
58	31	W. S. May 17th	M. 10	Cocain	Right; small incision at outer side with Taylor's knife; about two-thirds of lens matter removed by Bowman's syringe; needled May 14th; probably concussion cataract. Left; incision with keratome at outer side; much lens matter removed by curette; needled June 25th; lamellar	Favorable	None	Dec. 6th— + 11 D. = $\frac{6}{9}$.
21	32	C. W. June 29th	M. 6	"	Left; incision with keratome at outer side; much lens matter removed by curette; needled June 25th; lamellar	Favorable	None	Jan. 10th, 1890— + 12 D. = $\frac{6}{3\frac{1}{2}}$. + 15 D. = 6 J.
158	33	F. G. Oct. 4th	M. 2	Chloroform	Right; remains of congenital cataract, tough and yellowish; broken up by needle and small piece removed through an incision made with Taylor's knife; the lens had been needled twice previously	Favorable	None	Still some membrane in pupil.
186	34	E. P. Nov 19th	F. 11	Ether	Right; incision with Taylor's knife; evacuation by curette; some opaque matter left; needled Nov. 15th; adherent to wound lamellar	A short attack of iritis; membrane	None	Sept. 11th, 1890— + 10 D. = $\frac{6}{1\frac{1}{2}}$ fairly, and 1 J. fluently.
5	35	W. T. Feb. 8th	M. 12	Cocain	Right; incision outwards near corneal margin; a good deal of lens matter coaxed out; some left at inner pupillary border; needled Feb. 1st and 5th; lamellar	Favorable	None	Jan. 23th, 1890— + 9 D. = $\frac{6}{1\frac{1}{2}}$ partly.
15	36	A. G. April 30th	F. 5	Chloroform	Right; incision outwards with keratome; cannula forceps introduced twice, and a good-sized piece of tough capsule removed, leaving central clear space in pupil; needled April 5th; shrunken congenital cataract	Favorable	None	Result good, too young to test.

Mr. Lawford's Cases (7).

28	37	R. R. May 22nd	F.	28	Cocain	Right; incision in upper part of Favorable; a little cornea with keratome, enlarged iritis; membrane with secondary knife; lens capsule opened freely, more than once; lens did not come out readily, but by coaxing and pressure most of it was removed; complete soft cataract; no evident cause	None	May 5th, 1890— + 15 D., counts letters of $\frac{6}{12}$; (illiterate).
31	38	E. M. June 7th	M.	27	"	Right; extraction up with iridectomy; iris wounded in making incision; lens soft, not all got away; lamellar and pyramidal cataract, corneal nebulae, nystagmus	None	March 17th, 1890— + 12 D. = $\frac{6}{30}$.
33	39	E. C. June 21st	F.	17	"	Left; keratome incision down and out; nearly all lens matter removed by Bowman's syringe; needled June 18th; lamellar	None	Aug. 20th, 1890— + 13 D. = $\frac{6}{18}$. + 16 D. = 6 J.
28	40	R. R. Nov. 12th	F.	28	"	Left; short corneal flap upwards with Graefe's knife; capsule opened freely, lens came away nearly complete; some soft matter coaxed out afterwards; pupil left nearly central; (same patient as No 37)	None	May 5th, 1890— + 15 D., counts letters of $\frac{6}{30}$.
58	41	E. P. Dec. 31st	F.	6	Ether and chloroform	Right; incision up and out, enlarged by Taylor's knife; a moderate amount of lens matter coaxed out, but rather too much manipulation required; needled Nov. 15th and 22nd; lamellar	April 29th, '90— Needed. Oct. 31st— Needed	Clear pupil; vision difficult to test.

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St. Thomas's Hospital MEDICAL SCHOOL.

CALENDAR AND PROSPECTUS

FOR THE
YEAR COMMENCING OCTOBER 1ST, 1890.

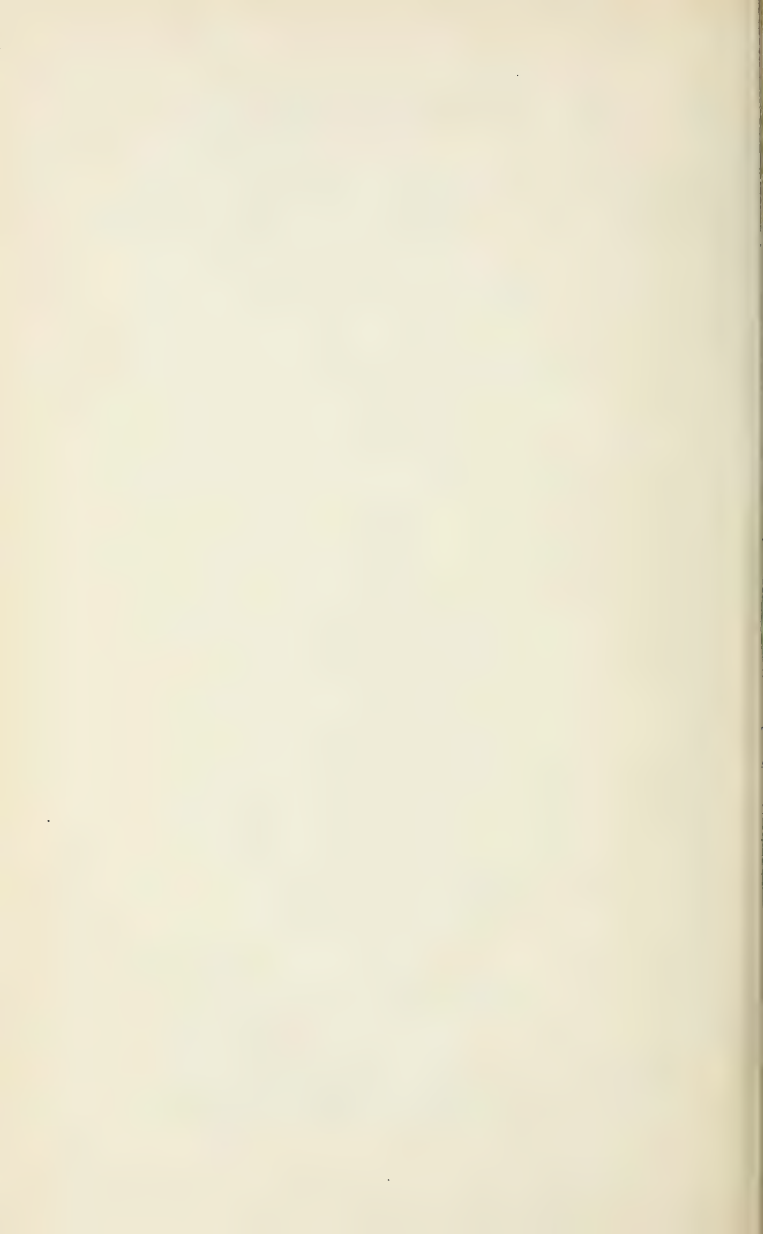


1890 & 1891.

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CONTENTS.

	PAGE
Annual Dinner	5
Appointments open to Students	28, 29
Beds, number of, in Hospital	13
Clinical Instruction	24
Course of Study Recommended	19, 20, 21
Examinations at Medical School	29, 30
Fees, Composition and Special	33, 34
Historical Notice of the Hospital and School ...	5 to 14
Hospital Buildings	13
Lecturers and Demonstrators	18
Lectures and Demonstrations, Winter Session ...	23
" " Summer Session ...	23
Lodgings	4
Medical and Physical Society	39
Medical and Surgical Officers and Lecturers ...	16, 17
Museums	36, 37, 38
Nightingale Training School for Nurses	15
Operation Days	24
Patients, Number of	14
Prizes, Medals and Scholarships	26, 27, 28
Prize Lists	30, 31, 32
Regulations for Students	21
School Buildings	14
Special Departments	22, 24, 25
St. Thomas's Hospital Reports	40
Students' Clubs, Social and Athletic	4
Suggestions to Students	19
Tables of Days and Hours of Attendance:—	
" " " in the Wards	22
" " " on the Out-	
Patients	22
" " " in the Special	
Departments	22
Tutorial Classes	25
University Classes	35
Calendar	41-54
List of Students who have obtained Honours ...	55-72

MEDICAL SCHOOL.

For information on all matters relating to the Medical School, Prizes, Scholarships, &c., application should be made to the Medical Secretary, Mr. G. RENDLE, at the Hospital, Albert Embankment, S.E., personally (10 to 4, Saturday 10 to 1) or by letter.

A Register of LODGINGS suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of new Students for whose accommodation in lodgings or otherwise no definite arrangements have been made.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.

THE STUDENTS' CLUB (SOCIAL AND ATHLETIC).

This Club has been established, at considerable expense, for the convenience of Students, and is maintained jointly by a yearly grant from the Medical Staff, and the Entrance Fees of Members.

All Students are strongly advised to join the Club when they enter the Medical School.

By payment of the Entrance Fee a Student becomes a permanent member of the Club. There is no Annual Subscription.

The Entrance Fee for a Student joining in his first year is 3 Guineas, in his second 2½ Guineas, and in other years 1½ Guineas.

A Student can, if he prefer it, join one Section only of the Club. The Entrance Fee for either the Social or Athletic Section alone is, for First year Students, 2 Guineas; Second year Students, 1½ Guineas; and for those of other years, 1 Guinea.

The Club premises are situated in the Medical School Building, and consist of a Dining Room, where between 9 a.m. and 6 p.m. refreshments can be obtained; a Smoking and Reading Room, supplied with most of the Daily and Illustrated Weekly Papers. A Cloak Room, with Lavatory and Bath Rooms, is attached.

The Athletic section comprises the Athletic, the Cricket, the Cross Country, the Football (Rugby and Association), the Rifle, the Rowing, and the Tennis Clubs.

The Entrance Fees may be paid to the Medical Secretary, Mr. G. RENDLE, or the Librarian, Mr. G. S. SAUNDERS.

Students who join the Athletic section only are not entitled to make use of the Club premises.

St. Thomas's Hospital

MEDICAL SCHOOL.

The WINTER SESSION 1890 - 91 will commence on WEDNESDAY, OCTOBER 1st, and terminate on MARCH 31st.

The SUMMER SESSION will begin on MAY 1st, and terminate on JULY 31st.

The Prizes will be distributed in the Governors' Hall on WEDNESDAY, October 1st, at 3 P.M. During the afternoon the various Departments of the Hospital and School will be open for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual Dinner, in which all former and present Students are invited to join, will take place the same evening at the Holborn Restaurant, at 6 for 6.30 o'clock, O. C. MAURICE, Esq., in the Chair.

THE first hospital of St. Thomas, within the precincts of the Priory of St. Mary Overie, being destroyed by fire in the year 1207, the prior and convent erected in the same year near the site of their house a temporary hospital. This building was in the emergency used for religious purposes; mass was said there until the priory was rebuilt. In 1228 Peter de Rupibus, Bishop of Winchester, built the Hospital of St. Mary or St. Thomas, Overie, on the opposite or eastern side of the highway, on land provided by Amicius, Archdeacon of Surrey, and dedicated it to St. Thomas the Martyr.

The following is a translation of the "charter" of 1228:—

"The Lord Peter's charter of indulgence for twenty days granted by him for this hospital.

"Peter, by the grace of God Bishop of Winchester, to all the faithful in Christ in the diocese of Winchester, greeting. In Him who is the salvation of the faithful. As saith the Apostle, bodily discipline which consists in

fasts, vigils, and other mortifications of the flesh, profiteth little, while piety availeth for all things, having the promise of the life which now is, and of that which is to come.

“Our Lord Jesus Christ among the works of piety enumerates, commends, and teaches us to fulfil six, as though more praiseworthy and more meritorious than the rest, saying, ‘I was an hungred, and ye gave Me to eat; I was thirsty, and ye gave Me to drink; I was a stranger, and ye took Me in; I was naked, and ye clothed Me; I was sick, and ye visited Me; in prison, and ye came to Me. To them that perform these works of piety He shall grant His blessing and the glory of His heavenly kingdom, saying, ‘Come, ye blessed of My Father, receive the kingdom which has been prepared for you from the beginning of the world.’ But to them that neglect and do not perform works of compassion He threatens His curse and the penalty of eternal fire, saying, ‘Go, ye cursed, into eternal fire, which has been prepared for the devil and his angels.’ It is therefore to be borne in mind, my dearest sons, and more deeply laid to heart, how needful and how conducive to the salvation of our souls it is to exercise more readily those works of piety whereby blessing is promised to us, and the felicity of eternal life is gained.

“Behold at Southwark an ancient hospital, built of old to entertain the poor, has been entirely reduced to cinders and ashes by a lamentable fire. Moreover, the place wherein the old hospital had been founded was less suitable, less appropriate for entertainment and habitation, both by reason of the straitness of the place, and by reason of the lack of water and of many other conveniences: according to the advice of us, and of wise men, it is transferred and transplanted to another more commodious site, where the air is more pure and calm, and the supply of waters more plentiful. But whereas this building of the new hospital calls for many and manifold outlays, and cannot be crowned with its due consummation without the aid of the faithful, we request, advise, and earnestly exhort you all, and with a view to the remission of your sins enjoin you, according to your abilities, from the goods bestowed on you by God, to stretch forth the hand of pity to the building of this new hospital, and out of your feelings of charity to receive the messengers of the same hospital coming to you for the needs of the poor to be therein entertained, that for these and other works of piety you shall do, you may, after the course of this life, reap the reward of eternal felicity from Him

who is the Recompenser of all good deeds, and the loving and compassionate God. Now we, by the mercy of God, and trusting in the merits of the glorious Virgin Mary, and the Apostles Peter and Paul, and St. Thomas the Martyr, and St. Swithin, to all the believers in Christ, who shall look with the eye of piety on the gifts of their alms—that is to say, having confessed, contrite in heart and truly penitent, we remit to such twenty days of the penance enjoined on them, and grant it to them to share in the prayers and benefactions made in the church of Winchester, and other churches erected by the grace of the Lord in the diocese of Winchester. Ever in the Lord; Farewell.”

The Bishop of Winchester or the Archbishop seems to have granted, in 1277, to the Brethren power to elect their own Master; in a visitation, 1323, they are ordered to follow the rule of St. Augustine—the rule of the parent house—in obedience, chastity, renunciation of individual property, and the Master to eat with the Brethren.

In 1417 the Master and Brethren formed a Court of themselves, and exercised authority within the precincts of the Hospital over persons regular or secular, and in cases civil or even criminal.

The Hospital, built in 1228, had by 1507 become dilapidated and insufficient; great efforts were then made to rebuild and enlarge it.

In the Duchy of Lancaster records there is “the Rentall of Thomas Becketts hospitall in Southwarke, of all the lands and tenements belonging to the hospitall.” It contains the names of the tenants and the rents paid; it is without date, but from internal evidence must be early in the sixteenth century.

Within the precincts of the hospital was the renowned printing press of James Nycolson, who, in 1527, signed the contract for the painted windows of King’s College, Cambridge, as “James Nycolson, of St. Thomas’s Spyttell in Southwark.” The most remarkable issue from this press was the first English Bible printed in England, inscribed thus—“Imprynted in Southwarke in St. Thomas Hospitale by James Nycolson. Dedicated by M. Coverdale to the King 1537.”

About this time there were a Master, Brethren, and three Lay Sisters; forty beds were made up for poor, infirm, and impotent people, who were supplied with victuals and firing.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large

revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King :

"Most redowted, puyasant, and noble Prince * * * *—here and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comforte, and helping of the poore and impotent people lying in every street, offending every clene persone passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliefe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governance both of all the lands, tenements, and revenues apperteynyng and belongyn to the said Hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facillie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for their own profit only, and not for the common utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted; and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the Citizens of London purchased of the Crown some of its landed estates, producing about £100 yearly. The want

of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the City the Mansion house of St. Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the Citizens of London the Hospital of St Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the city of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the Citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids, or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Greyfriars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal per-

mission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy Trinity they named, in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the king's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitalls of K. Henry the VIII. and K. Edward the VI., viz. St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676, ceased, "as if by divine interposition," at the Hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant,

was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles Joye, some time treasurer of the Hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768, an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries.

Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St. Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, materia medica, midwifery, botany, and physiology—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Frederick Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong ;

and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditionary glories.

From its foundation down to the year 1862, the Hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway accommodation, and the establishment temporarily removed to the Surrey Gardens, where it was carried on till the Summer of 1871. In 1868 the first stone of the new Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by Her Majesty in 1871. In September the patients were first admitted into the new Hospital, and the Medical School was opened on October the 2nd.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and

third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

Of the whole accommodation of the Hospital, about 180 beds are appropriated to ordinary Medical cases, and 230 to ordinary Surgical cases. There are also special Wards for the reception of diseases peculiar to women; for diseases of the eye; for venereal affections; and for children under six years of age. In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Out-patients' Department is extensive and well arranged, and every facility is afforded for the treatment of different forms of Medical and Surgical casualties and diseases.

During the twelve months ending December 31st, 1889, the number of patients admitted into the Hospital amounted to 4,699. In the same period, 28,032 Out-patients have been treated, and in the Maternity department 2,240 women have been attended at their own homes. Casualties, to the number of 65,450 attendances, were treated during the same period.

The School buildings stand at the southern extremity of the Hospital, from which they are isolated by a large open quadrangle with terrace overlooking the river. They contain ample accommodation for large classes of students.

The Museum is one of the most important in London. There is a large Reading Room and Library for the use of the pupils.

In addition to these are the various Lecture Rooms, the Dissecting Rooms, the Laboratories for Practical Physiology, for Practical Chemistry and Bacteriology, and the Post-mortem Rooms.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women as Hospital Nurses. On the satisfactory completion of one year's training, they will be required to enter into service as Nurses in the Metropolitan or Provincial Hospitals or Infirmaries. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments.

The Regulations as to the admission of Candidates may be obtained by writing to Henry Bonham-Carter, Esq., the Secretary of the Nightingale Fund, 5, Hyde Park Square, London, W.

Institutions requiring trained Superintendents or Nurses are requested to apply to the Secretary of the Nightingale Fund, or to Miss L. M. Gordon, the Matron of the Hospital, giving as long previous notice as possible of their requirements.

Women wishing to be trained should, whenever it is possible, make personal application to Miss Gordon, to be entered on the list of Candidates, for admission as vacancies occur.

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<i>Practical Chemistry</i>	Dr. BERNAYS.
<i>Elementary Clinical Medicine</i>	Dr. HADDEN and Dr. ACLAND.
<i>Practical and Manipulative Surgery</i> ..	{ Mr. MAC KELLAR, Mr. PITTS, and Mr. BALLANCE.
<i>Demonstrations in Anatomy</i>	{ Mr. ANDERSON, Mr. MAKINS, Dr. TAYLOR, Mr. PARSONS, Mr. ABBOTT.
<i>Demonstrations in Morbid Anatomy</i> ..	{ Dr. SHARKEY, Dr. HADDEN, and Dr. GULLIVER.
<i>Demonstrations in Physiology, Practical Physiology, and Morbid Histology</i>	{ Dr. COPEMAN.
<i>Diseases of the Eye</i>	Mr. NETTLESHIP and Mr. LAWFORD.
<i>Diseases of the Skin</i>	Mr. ANDERSON.
<i>Diseases of the Throat</i>	Dr. F. SEMON.
<i>Diseases of the Ear</i>	Mr. BALLANCE.
<i>Diseases of the Teeth</i>	Mr. C. E. TRUMAN.

SUGGESTIONS TO STUDENTS ABOUT TO ENTER THE MEDICAL PROFESSION.

No Medical Student can register the commencement of Medical Study until he has passed (on one or more occasions) a Preliminary Examination in the subjects of General Education as specified in the following list:—

(1) English Language; (2) Latin; (3) Arithmetic, Algebra, and Euclid; (4) Elementary Mechanics; (5) either Greek, French, German, Italian, Logic, Botany, Zoology, or Chemistry.

A Student who has not passed such an examination is recommended to pass either the Matriculation of the University of London, the Examination in Arts of the Apothecaries' Society of London, or the Professional Preliminary Examination of the College of Preceptors. The regulations respecting these may be obtained from the Registrar, University of London, Burlington Gardens, W., the Secretary, Apothecaries' Hall, Blackfriars, E.C., and the Secretary, College of Preceptors, Bloomsbury Square, W.C.

Certificates of Graduation, Matriculation, and the Local Examinations of British and Colonial Universities are accepted by the General Medical Council provided that the above-mentioned subjects be shown to have been included.

Students who propose to obtain Medical Degrees in the University of London must pass both the Matriculation and the Preliminary Scientific Examinations before commencing their regular Medical Studies.

For the Preliminary Scientific Examination and the Intermediate Examination in Medicine special classes are held during the Winter and Summer Sessions (see p. 35).

For a Student who enters in October, intending to obtain the double qualification of the "Conjoint Board" (L.R.C.P. Lond. and M.R.C.S. Eng.) the following course of study is recommended. (For days and hours of Lectures, &c., see Time Table, p. 23.)

First Winter Session.*

Anatomy, Physiology, Chemistry, and Physics. Anatomical and Physiological Demonstrations. Dissections. Lectures, &c.

"Sessional" at Medical School in December and in March. Part III. (Elementary Anatomy and Physiology) of First Examination of the "Conjoint Board" in March. Examinations.

First Summer Session.*

Materia Medica, Practical Chemistry and Practical Physiology; Instruction in Practical Pharmacy may be obtained from the Hospital Pharmaceutist. (Fee, three guineas for three months, p. 34.) Lectures, &c.

"Sessional" in July, and Parts I. and II. † of the "First Conjoint." Examinations.

Second Winter Session.*

Anatomy and Physiology with Demonstrations and Dissections. Tutorial Class in Anatomy. Lectures, &c.

"Sessional" in December and in March; "Tests," and "Second Conjoint" in March. Examinations.

N.B.—The "Final Conjoint" cannot be taken until two years after the second examination has been passed; hence the importance of passing the second at this stage.

Hospital Practice, Medical and Surgical.

* Cards of admission to the Lectures, &c., must be obtained from the Medical Secretary at the commencement of every Session.

† Part II. (Materia Medica) may be deferred and taken as part of the "Second Conjoint."

Second Summer Session.*

Lectures.
Examina-
tions.

Hospital Practice, Medical and Surgical.
Midwifery, Practical Surgery.
"Sessional" in July.

The course of instruction in Elementary Clinical Medicine to be attended by Candidates for Out-Patient Clinical Clerkships.

Third Winter Session.*

Lectures.
Examina-
tions.

Hospital Practice, Medical and Surgical.
Medicine, Surgery, and Surgical Pathology, Practical Surgery, Practical Course of Pathological Anatomy.

"Sessional" in December and March.

Clinical Clerkship (if not held during July, August, and September), and Dressership in the Out-Patient Departments.

Maternity Cases may be attended at any time after the Lectures on Midwifery of the Second Summer.

Third Summer Session.*

Lectures.
Examina-
tions.

Hospital Practice, Medical and Surgical, with Clerkship or Dressership.
Pathological Anatomy, Forensic Medicine, Examination of Eye.
"Sessional" in July.

Fourth Winter Session.*

Lectures.

Hospital Practice, Medical, Surgical, the Special Departments, and Post-mortem Examinations. Clerk or Dress in special Departments and Post-mortem Room. Instruction in Vaccination. (Fee, one guinea, p. 34.)

Practical Course of Pathological Anatomy (if not taken in third winter), Clinical Lectures on Medicine, Surgery, and Diseases of Women; Obstetric Demonstrations; Diseases of Eye.

Fourth Summer Session.*

Lectures.
Examina-
tions.

Hospital Practice, Medical and Surgical, and Special Departments.
Clinical Medicine, Clinical Surgery, Mental Disease, Public Health, and Sanitary Science. Tutorial Classes in Surgery, including operations upon the Dead Subject.

"Final Conjoint" in Medicine, Surgery, or Midwifery.

NOTE.—The three subjects *may* be taken at one examination.

If a Student enters in May, intending to obtain the above qualification, he is advised to pursue the following course of study:—

N.B.—Students who join a Medical School in May have the advantage of an additional three months to devote to the preparation for the three parts of the First Examination of the "Conjoint Board."

Preliminary Summer Session.*

Lectures.
Examina-
tions.

Lectures and Classes in Chemistry and Chemical Physics, and in Materia Medica.—Instruction in Practical Pharmacy may be obtained from the Hospital Pharmaceutist. (Fee, three guineas for three months, p. 34.)

Botany (if required for a higher examination).

Part II. (Materia Medica) of "First Conjoint" in July or October.

First Winter Session.*

(Same as for Students entering in October.)

First Summer Session.*

Lectures.
Examina-
tions.

Practical Chemistry and Practical Physiology.

"Sessional" and Part I. (Chemistry and Physics) of "First Conjoint" in July.

* Cards of admission to the Lectures, &c., must be obtained from the Medical Secretary at the commencement of every Session.

Second Winter and Subsequent Sessions.

(Same as for Students entering in October.)

Candidates for the Final Examination for the Diploma in Medicine and Surgery of the "Conjoint Board" are required to produce a certificate of attendance on not less than twenty labours. Students who have passed the "Second Conjoint," and have attended a Course of Lectures on Midwifery, may enter their names for the Rota of Obstetric Clerks.

All Students are required by the Governors to conform to the Regulations of the Hospital and Medical School, and the School Committee is empowered, with the approval of the Treasurer, to suspend or remove a Student at any time for adequate reason. (See also p. 33.)

No Student is admitted to any part of the Final Examination of the "Conjoint Board" until at least two years after passing the Second Examination, and the latter cannot be taken until the end of the Second Winter Session.

As but few Lectures need be attended in the fourth year, the greater part of the time can, and should, be given to the practical study of disease in the Wards, Out-Patient Departments, and Post-Mortem Room.

All Schedules requiring signature should be given to the Secretary of the Medical School three weeks before the date on which they have to be sent in to the various licensing bodies. The blank spaces in the Certificates for which signatures are wanted must be filled in by the Student himself, or the Certificates will not be signed.

Students when qualified should use every effort to obtain one or more of the senior appointments open to them, especially those of House Physician, House Surgeon, and Resident Accoucheur. These and other appointments, of which details are given at p. 28, afford opportunities for obtaining practical professional knowledge which cannot be estimated too highly. No payment is required for any of them.

Students intending to prepare for **University Degrees and other higher Examinations** should apply to the Medical Secretary for the Regulations relating thereto. (For Special Classes for these Examinations see p. 35.)

Students have access, with the permission of the Officers under whose superintendence they are placed, to the Museums of Human and Comparative Anatomy and Pathology, of Materia Medica, of Botany, and of Chemistry and Mineralogy, and to the Laboratories of Practical Physiology and Practical Chemistry; also, by special permission, to Dr. Stone's collection of Physical apparatus; and to the Library, which contains a large collection of works of reference and modern text-books.

TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS
IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. BRISTOWE	—	2	—	—	2	—
Dr. ORD	2	—	—	2	—	—
Dr. HARLEY	—	2	—	—	2	—
Dr. PAYNE	2	—	—	2	—	—
Dr. CULLINGWORTH	—	2	—	—	2	—
Mr. SYDNEY JONES	—	2	—	—	2	—
Mr. CROFT	2	—	—	2	—	—
SIR WILLIAM MAC CORMAC ..	2	—	—	2	—	—
Mr. MAC KELLAR	—	2	—	—	2	—
Mr. NETTLESHIP	—	2	—	—	—	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND
ASSISTANT-SURGEONS ON THE OUT-PATIENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. SHARKEY	1.30	—	—	1.30	—	—
Dr. GULLIVER	—	1.30	—	—	1.30	—
Dr. HADDEN	—	—	1.30	—	—	1.30
Dr. ACLAND	—	1.30	—	1.30	—	—
Dr. CORY (Women and Children) ..	—	—	1.30	—	—	1.30
Mr. CLUTTON	—	1.30	—	—	1.30	—
Mr. ANDERSON	1.30	—	—	1.30	—	—
Mr. PITTS	—	—	1.30	—	—	1.30
Mr. MAKINS	1.30	1.30	—	—	—	—

TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL
DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Mr. NETTLESHIP (Diseases of the {	—	1.30	—	—	1.30	—
Mr. LAWFORD } Eye)	1.30	—	1.30	1.30	—	—
Mr. ANDERSON (Diseases of Skin)	—	—	—	—	1.30	—
Dr. SEMON (Diseases of Throat) ..	—	1.30	—	—	1.30	—
Mr. BALLANCE (Diseases of Ear)	1.30	—	—	—	—	—
Mr. TRUMAN (Diseases of Teeth)	—	10	—	—	10	—
Dr. CORY (Vaccination)	—	—	11.30	—	—	—

DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS.

WINTER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance.
Physics	—	—	—	—	—	12	1st Year.
Chemistry	—	10.30	—	10.30	10.30	—	do.
Descriptive and Surgical Anatomy ..	11	11	—	9.30	—	9.30	do.
Anatomical Demonstrations*	10½-4½	10½-4½	10½-4½	10½-4½	10½-4½	10½-1	2nd Year.
Physiology	9.30	—	9.30	—	9.30	—	1st & 2nd.
Physiological Demonstrations	10.30	12	—	—	12	—	do.
Practical and Manipulative Surgery†	12	—	—	12	10.30	—	1st Year.
Medicine	—	—	—	—	—	9	2nd Year.
Surgery	—	—	—	—	—	—	3rd Year.
Medicine	{ Oct., Nov., Dec.	4	—	4	4	—	do.
Surgery	{ Jan., Feb., Mar.	9	—	9	9	—	do.
Surgery	{ Oct., Nov., Dec.	9	—	9	9	—	do.
Surgery	{ Jan., Feb., Mar.	4	—	4	4	—	do.
Surgical Pathology	—	—	12	—	—	—	do.
Diseases of Women (Oct., Nov., Dec.)	—	4	—	—	—	—	3rd or 4th.
„ „ Clinical { Jan., Feb., Mar.	—	4	—	—	—	—	do.
Pathological Anatomy (Practical) ..	—	—	—	—	—	11½-1½	do.
Diseases of the Eye { Oct., Nov., Dec.	—	5	—	—	5	—	do.
Clinical Surgery (Special Course) ..	—	—	—	—	5	—	do.
Obstetric Demonstrations	—	9	—	—	—	—	do.
SUMMER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years.
Botany	—	10	10	—	—	10	1st Year.
Materia Medica	—	—	4	—	—	11	do.
Practical Chemistry	10-12	—	—	10-12	10-12	—	do.
Practical Physiology†	—	2	2	—	2	—	do.
Anatomical Demonstrations*	10-4	10-4	10-4	10-4	10-4	11-1	2nd Year.
Midwifery	4	9	—	9	4	—	do.
Comparative Anatomy	9	—	—	—	9	—	do.
Practical and Manipulative Surgery†	—	—	—	—	—	9	do.
Forensic Medicine	—	4	—	4	—	9	3rd Year.
Pathological Anatomy	—	—	9	—	9	—	do.
Do. Demonstration	4.30	—	—	—	—	—	do.
Mental Diseases	—	—	—	—	12	—	3rd or 4th.
Public Health and Sanitary Science	—	—	10.30	—	—	—	do.
Therapeutics	—	—	—	4	—	—	do.
Examination of the Eye	—	5	—	5	—	—	do.
Clinical Surgery (Special Course) ..	9	—	—	—	—	—	do.

The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.

* The Dissecting Room is open daily to the Students from 9 a.m. till 5 p.m. (Saturdays 9 to 1). Special Tutorial Classes in Anatomy are held by the Lecturers and Demonstrators (p. 25).

† Classes in Practical and Operative Surgery are held four times a week for six weeks prior to the final examinations of the Examining Board in January, April, and July. In connection with these Classes Clinical Instruction is given in the Wards by the Resident Assistant Surgeon, and a course of demonstrations on Museum specimens is given by the Curator, Mr. SHATTOCK (p. 25).

‡ On Mondays, at 2 p.m., during the Summer Session, Dr. CHARLES gives instruction to a Senior Class in Section Cutting and Mounting, and in Volumetric Analysis, and on Thursdays at 12, a class in Advanced Practical Physiology is held by Dr. SHERRINGTON (p. 25).

CLINICAL TEACHING OF MEDICINE AND SURGERY.

Clinical instruction is given daily by the Physicians and Surgeons during their visits to the Wards, and by the Assistant Physicians and Assistant Surgeons in the Out-Patient Departments (Time Table, p. 22). Lectures on Clinical Medicine and Surgery are given in the afternoon every week throughout the academical year by one or more of the Physicians and Surgeons; there is also a special course of Lectures on Clinical Surgery once a week in the morning (Time Table, p. 23).

DISEASES OF WOMEN.—Clinical instruction is given in Adelaide Ward on Tuesdays and Fridays at 2 p.m., and in the Out-Patient room on Wednesdays and Saturdays at 1.30 p.m. A course of Clinical Lectures is delivered during the latter half of the winter session.

DISEASES OF CHILDREN.—Instruction is given by Dr. CORY, in the Out-Patient room, on Saturdays at 1.30.

MIDWIFERY.—A maternity department is connected with the hospital, women being attended in confinement at their own homes by students of the hospital, under the supervision of the Assistant Obstetric Physician (p. 29). A short course of Obstetric demonstrations on the model is given by Dr. CORY during the winter session at 9 a.m.

DAYS AND HOURS OF SURGICAL OPERATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Surgical Operations	—	—	1.30	—	—	1.30
„ „ Gynaecological	—	—	—	2.0	—	—
„ „ Ophthalmic	—	4.0	—	—	2.0	—

POST-MORTEM EXAMINATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. SHARKEY	—	2.0	2.0	—	—	—
Dr. HADDEN	2.0	—	—	—	2.0	—
Dr. GULLIVER	—	—	—	2.0	—	2.0

THE SPECIAL DEPARTMENTS.

(For Times of Attendance see Table, page 22.)

Vaccination is taught practically by Dr. CORY, who is authorised by the Local Government Board to give certificates of proficiency in Vaccination at St. Thomas's Hospital. Fee, One Guinea (see p. 34).

Diseases of the Eye.—Clinical teaching in the Out-Patient rooms daily except Saturday. Clinical Lectures or Ophthalmoscopic Demonstrations weekly.

Diseases of the Skin.—Clinical Instruction by Mr. ANDERSON on Fridays.

Diseases of the Throat are treated by Dr. SEMON on Tuesdays and Fridays. During the Winter Session Dr. SEMON gives a short course of Clinical Lectures to senior students.

Diseases of the Ear.—Clinical Instruction by Mr. BALLANCE on Mondays.

Diseases of the Teeth.—Mr. TRUMAN and Assistant give instruction in Dental Surgery on Tuesdays and Fridays.

The Administration of **Anæsthetics** is taught practically by Mr. TYRRELL and Mr. WHITE.

CLASSES AND DEMONSTRATIONS not Specified in the Tables at p. 23.

Anatomy.—Special Tutorial Classes in preparation for the April and July examinations (first and second) of the Conjoint Board are held in the course of the winter and summer sessions by the Lecturers MESSRS. ANDERSON and MAKINS, and by the Demonstrators, Dr. TAYLOR, Mr. PARSONS, and Mr. ABBOTT; these are conducted mainly by examination upon subjects previously announced.

Physiology.—In the Summer Session instruction is given to a senior class in Cutting and Mounting Sections and in Volumetric Analysis by Dr. CHARLES on Mondays at 2 o'clock; and in advanced Practical Physiology (use of Physiological apparatus, &c.) by Dr. SHERRINGTON on Thursdays at 12.

Elementary Clinical Medicine.—An elementary course of practical instruction in the means of Physical Diagnosis is held by Drs. HADDEN and ACLAND for about a month before each quarterly appointment of Out-patient Clinical Clerks, and all intending applicants are required to attend this course, or to have attended an equivalent course elsewhere.

Practical Surgery for the Final Examination of the Conjoint Board.—In addition to the systematic instruction in the use of Surgical apparatus, &c., given in the Second Summer and Third Winter Sessions (Tables, p. 23), Tutorial Classes in Surgery are held daily for the six weeks preceding the final examination of the Conjoint Board in January, April, and July. The General Surgery, Surgical Anatomy and Operations are taken by MESSRS. MACKELLAR, PITTS, and BALLANCE, the Pathological part by Mr. SHATTOCK, and the Clinical part in the Wards by the Resident Assistant Surgeon.

A Class for learning the use of the Ophthalmoscope is held each Session by Mr. LAWFORD.

The Museum is open to Students daily from 9 a.m. till 5 p.m., and every encouragement is given to Students to make use of its well arranged educational series for the purposes of their studies. A new Catalogue is being prepared by Mr. SHATTOCK, and the first part has been published.

For the courses above referred to no extra fee is charged.

For Special courses which may be attended on payment of an extra fee, see p. 34.

SCHOLARSHIPS, PRIZES, APPOINTMENTS, AND HONORARY DISTINCTIONS.

OPEN SCHOLARSHIPS IN NATURAL SCIENCE.

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of 125 Guineas (*i.e.*, a free admission) and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany, Zoology or Physiology, at the option of Candidates. The standard, so far as the subjects are the same, will be that of the Preliminary Scientific Examination for Honours of the University of London.

These Scholarships are open to all Students who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once as "Perpetual" Pupils. Chemistry and Physics are compulsory subjects for this Examination, and Candidates must take up one of the other subjects. The Examination will be conducted by means of written papers and practical work, and will be held on the 26th, 27th, and 29th of September, 1890. The names of Competitors with Certificate of Preliminary Examination must be sent to the Secretary not later than September 17th.

THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., is endowed with £1,000 Consols, the Interest on which, about £27 10s., is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, is endowed with £1,400 Consols, the Interest on which, about £38 10s., is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. THOMAS BEVILL PEACOCK, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship; is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

Gentlemen obtaining the above Scholarships are not precluded from receiving any of the Prizes awarded at the subsequent periodical examinations.

PRIZES.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1890-1891:—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of 125 Guineas and £60 respectively, at Entrance.

AT THE END OF FIRST YEAR.

Winter.

1st.	..	The William Tite Scholarship	..	..	..	£27 10s.
2nd.	..	College Prize	..	..	..	£20.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

SECOND YEAR.

Winter.

1st.	..	The Musgrove Scholarship	..	..	..	£38 10s.
2nd.	..	College Prize	..	..	..	£20.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

THIRD YEAR.

Winter.

Second Tenure of The Peacock Scholarship (if holder obtains 1st Class in this examination) £38 10s.

1st.	..	College Prize	..	..	..	£20.
2nd.	..	Ditto	..	..	..	£15.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

Free Scholarships are given to distinguished Pupils of Merchant Taylors' and City of London Schools, and Epsom College.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.*

THE GRAINGER TESTIMONIAL PRIZE, *Annually.*

THE TREASURER'S GOLD MEDAL, *do.*

Intending Competitors, especially those who have spent a part of their curriculum elsewhere, should apply to the Medical Secretary for detailed regulations.

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fourth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually, to a Fourth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation

in the Wards, not, however, to exceed ten in number. Preference is given, merit in other respects being equal, to Reports illustrated by the author's drawings, and short Clinical Remarks must accompany each Report. The next award will be made at the end of 1891-92, papers to be sent in before April 1st, 1892.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually for original work in Anatomy and Physiology. A small sum is provided annually to reimburse unsuccessful competitors for any expense which they may have incurred in the preparation of suitable illustrations. When such compensation is allowed, the Preparations and Dissections become the property of the Medical School. The conditions of competition for this Prize can be learnt from the Medical Secretary. Subject to the approval of the School Committee, candidates may select their own topics; otherwise, the following two are given for selection:— 1. A series of Preparations and Dissections illustrating the Anatomy of the Male and Female Bladder; Uterus; Ovaries; Female Urethra; Prostate; Prostatic, Membranous and Bulbous portions of the Male Urethra, accompanied by a description of the parts exposed in the specimens. 2. The Sub-Maxillary Gland, showing dissections of the gland *in situ* with its nerve connections, and by microscopical preparations the ultimate distribution of the nerves. Papers to be sent in before October 1st, 1891.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 4th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner.

APPOINTMENTS.

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding three years.

Two HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than five years. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

Two RESIDENT and ONE NON-RESIDENT HOUSE PHYSICIANS, an ASSISTANT HOUSE PHYSICIAN, Four HOUSE SURGEONS, and Two ASSISTANT HOUSE SURGEONS, are selected every three months from Gentlemen who have obtained their professional diplomas; they hold office for three or six months. One House Physician, the Assistant House Physician, and the Assistant House Surgeons, are non-resident, but the other Officers, together with the Dressers on accident duty, are provided with Rooms and Commons in the Hospital, free of expense.

A RESIDENT ACCOUCHEUR is selected from Qualified Students of the Hospital (preference being given to those who have held the office of Senior Obstetric Clerk, and performed its duties satisfactorily). He is provided with Rooms and Commons in the Hospital, free of expense, and holds office for a period of Three Months.

A SENIOR OBSTETRIC CLERK, chosen from Qualified Students who have worked satisfactorily in the Obstetric and Gynæcological departments, is appointed every Three Months, his duties being those of Assistant Resident Accoucheur. He is provided with Commons, and must live near the Hospital.

TWO OPHTHALMIC CLINICAL ASSISTANTS, chosen from Qualified Students who have worked satisfactorily in the Ophthalmic Department, are appointed for six months, one of whom receives a Salary at the rate of £50 per annum, and the other is provided with Commons.

CLINICAL ASSISTANTS in the Departments for Diseases of the Skin, Throat, and Ear, are appointed every three months from Qualified Students who have served as Clinical Clerks or Dressers in those Departments.

ASSISTANTS to the Teachers of Practical and Manipulative Surgery are appointed for the Winter and Summer Sessions.

CLINICAL CLERKS, and DRESSERS, to In-Patients are selected to the number of at least 100 each year. They are chosen from amongst the most eligible pupils. CLINICAL CLERKS, and DRESSERS, for the Out-Patients are also appointed to the number of at least 80 to 100 each year; applicants are required to have passed the 2nd examination of the Conjoint Board, or an equivalent examination, and to have attended a course of instruction in Elementary Clinical Medicine (p. 25).

STUDENTS who have attended a course of Lectures on Midwifery may enter their names as Obstetric Clerks and will be appointed in rotation. Each Clerk holds office for a fortnight, and Certificates of Honour are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases. About 50 Obstetric Clerks are appointed yearly.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Physiological Laboratory. They receive Certificates of Honour according to merit.

PROSECTORS are appointed in the early part of the Winter Session, and Certificates of Honour are awarded to the best Dissectors.

STUDENTS are likewise appointed to act as Assistants to the Demonstrators of Pathological Anatomy in the Post-mortem Room.

REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS AT THE MEDICAL SCHOOL.

1. In accordance with the Regulations of the Qualifying Bodies, Students must attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise the signature to their Schedules may be withheld.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. Students may also be examined in Botany (1st Summer), and Comparative Anatomy (2nd Summer), for each of which 100 marks will be the maximum. But a number less than thirty per cent. of the marks obtainable in each will not be allowed to count.

4. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

1st YEAR'S SUBJECTS.		2nd YEAR'S SUBJECTS.	
WINTER .	Anatomy 600	WINTER .	Anatomy 600
	Practical Anatomy . . . 200		Practical Anatomy . . . 200
	Physiology 600		Physiology 600
	Practical Physiology . . 100		Practical Physiology . . 100
	Chemistry 600		
	Total 2100		Total. 1500
SUMMER .	Practical Chemistry . . 300	SUMMER .	Midwifery 500
	Materia Medica 200		Practical Surgery . . . 200
	Practical Physiology . . 300		
	Total 800		Total 700

3rd YEAR'S SUBJECTS.

WINTER . Medicine	650	SUMMER . Forensic Medicine	250
Surgery	650	Pathological Anatomy	350
Practical Surgery	300		
Total	1600	Total	600

5. All Students who have obtained at least one-third of the total number of marks in each compulsory subject, and not less than two-thirds of the total number allotted to all the compulsory subjects collectively, shall be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the compulsory subjects collectively shall be placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position will not be published, but a General List showing the exact position of each Student at every Examination shall be kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

6. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

7. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

8. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

9. The Authorities reserve the right of withholding any Prize, if no competitor of sufficient merit present himself.

Distribution of Prizes for the Past Sessions.

SUMMER SESSION, 1889.

FIRST YEAR'S STUDENTS.

E. SMITH, <i>Wandsworth Common</i> ...	...	...	...	{ College Prize, £15, and Certificate of Honour.
E. M. HAINWORTH, <i>Blackheath</i> ...	...	...	...	{ College Prize, £10, and Certificate of Honour.
W. REDPATH, <i>Norwood Road</i> ...	...	...	...	Certificate of Honour.
G. J. ARNOLD, <i>Wickwar</i> ...	...	...	...	Certificate of Honour.
E. MISKIN, <i>York Road, Lambeth</i> ...	...	...	...	Certificate of Honour.
K. B. J. VICKERS, <i>Darlington</i> ...	...	...	...	Certificate of Honour.
H. M. MOORE, <i>Eastbourne</i> ...	...	...	...	Certificate of Honour.
A. R. O. MILTON, <i>Brighton</i> ...	...	...	...	Certificate of Honour.

SECOND YEAR'S STUDENTS.

W. B. WINSTON, <i>Oxford Gardens</i> ...	...	...	...	{ College Prize, £15, and Certificate of Honour.
W. G. SUTCLIFFE, <i>Clapham</i> ...	...	...	...	{ College Prize, £10, and Certificate of Honour.
W. P. PURVIS, <i>Greenwich</i> ...	...	...	...	Certificate of Honour.
C. LATTEB, <i>Downham Market</i> ...	...	...	...	Certificate of Honour.

THIRD YEAR'S STUDENTS.

A. KING, <i>Norwich</i> ...	...	...	...	{ College Prize, £15, and Certificate of Honour.
W. H. MILLAR, <i>Brixton Hill</i> ...	...	...	...	{ College Prize, £10, and Certificate of Honour.

WINTER SESSION, 1889-90.

ENTRANCE SCIENCE SCHOLARSHIPS.

T. G. NICHOLSON, <i>Norwich</i>	{	Scholarship, 125 Gs., and Certificate of Honour.
A. E. RUSSELL, <i>Greenwich</i>		Scholarship, £60, and Certificate of Honour.

FIRST YEAR'S STUDENTS.

S. W. F. RICHARDSON, <i>Whitby</i>	{	The Wm. Tite Scholarship £27 10s., and Certificate of Honour.
A. E. RUSSELL, <i>Greenwich</i>		College Prize, £20, and Certificate of Honour.
L. J. MISKIN, <i>York Road, Lambeth</i>	{	College Prize, £10, and Certificate of Honour.
H. W. HARDING, <i>Greenwich</i>		Certificate of Honour.
T. G. NICHOLSON, <i>Norwich</i>		Certificate of Honour.
E. A. SAUNDERS, <i>Batham</i>		Certificate of Honour.
G. R. HARCOURT, <i>Wanstead</i>		Certificate of Honour.
A. E. THORP, <i>Lordship Lane, Dulwich</i>		Certificate of Honour.
W. D. KNOCKER, <i>Sevenoaks</i>		Certificate of Honour.

SECOND YEAR'S STUDENTS.

C. PLANCK, <i>Edenbridge</i>	{	The Peacock Scholarship, £38 10s., and Certificate of Honour.
E. SMITH, <i>Wandsworth Common</i>		College Prize, £20, and Certificate of Honour.
W. G. SUTCLIFFE, <i>Clapham</i>	{	College Prize, £10, and Certificate of Honour.
E. M. HAINWORTH, <i>Blackheath</i>		Certificate of Honour.
C. L. B. STARES, <i>Portchester</i>		Certificate of Honour.
J. W. HEWETT, <i>He ne Hill</i>		Certificate of Honour.

THIRD YEAR'S STUDENTS.

J. H. FISHER, <i>Exeter</i>	{	College Prize, £20, with 2nd Tenure of the Musgrove Scholarship, and Certificate of Honour.
C. S. WALLACE, <i>Haslemere</i>		College Prize, £15, and Certificate of Honour.
H. SIMPSON, <i>Market Weighton</i>	{	College Prize, £10, and Certificate of Honour.
A. M. CAMPBELL, <i>Worcester</i>		Certificate of Honour.
A. BANKS, <i>Clapham</i>		Certificate of Honour.
C. S. JAFFÉ, <i>Westbourne Terrace</i>		Certificate of Honour.

PRACTICAL MEDICINE.

W. W. STABB, <i>Torquay</i>	{	The Mead Medal, founded by Mr. and Mrs. NEWMAN SMITH.
J. J. PERKINS, <i>Brixton</i>		Special Mention and Certificate of Honour.

SURGERY AND SURGICAL ANATOMY.

T. H. KELLOCK, <i>Totnes</i>	{	The Cheselden Medal, founded by the late GEORGE VAUGHAN, Esq.
D. F. SHEARER, <i>Bradford, Yorkshire</i>		Special Mention and Certificate of Honour.
T. H. HAYDON, <i>Richmond, Surrey</i>		Certificate of Honour.

PROSECTORS.

E. M. HAINWORTH, <i>Blackheath</i>	Certificate of Honour.
J. W. HEWETT, <i>Herne Hill</i>	Certificate of Honour.
C. PLANCK, <i>Edenbridge</i>	Certificate of Honour.
E. SMITH, <i>Wandsworth Common</i>	Certificate of Honour.
C. L. B. STARES, <i>Portchester</i>	Certificate of Honour.
W. G. SUTCLIFFE, <i>Clapham</i>	Certificate of Honour.

ASSISTANTS IN PHYSIOLOGICAL LABORATORY.

A. BANKS, <i>Clapham</i>	Certificate of Honour.
H. J. FREDERICK, <i>Sidecup</i>	Certificate of Honour.
W. P. PURVIS, <i>Greenwich</i>	Certificate of Honour.
G. J. ARNOLD, <i>Wickwar</i>	Certificate of Honour.
W. REDPATH, <i>Norwood Road</i>	Certificate of Honour.

PATHOLOGICAL ASSISTANTS.

A. DALZELL, <i>Workington</i>	Certificate of Honour.
W. B. WINSTON, <i>Oxford Gardens</i>	Certificate of Honour.

HOUSE PHYSICIANS.

T. P. COWEN	}	...	...	...	...	Certificate of Honour.
F. C. ABBOTT		...	...	...	...	Certificate of Honour.
F. E. FORWARD		...	...	...	...	Certificate of Honour.
S. G. TOLLER		...	...	...	...	Certificate of Honour.
M. H. SPENCER	} Non-Resident {	..	...			Certificate of Honour
L. COBBETT		...	...			Certificate of Honour.

ASSISTANT HOUSE PHYSICIANS.

W. B. DE JERSEY	Certificate of Honour.
T. H. DICKSON	Certificate of Honour.

HOUSE SURGEONS.

H. G. TURNEY	Certificate of Honour.
A. N. BOYCOTT	Certificate of Honour.
H. H. HULBERT	Certificate of Honour.
F. R. S. MILTON	Certificate of Honour.
T. W. LAMBERT	Certificate of Honour.
T. P. COWEN	Certificate of Honour.
G. E. ANSON	Certificate of Honour.
H. GERVIS	Certificate of Honour.

ASSISTANT HOUSE SURGEONS.

F. R. S. MILTON	Certificate of Honour.
H. C. BRISTOWE	Certificate of Honour.
G. E. ANSON	Certificate of Honour.
H. GERVIS	Certificate of Honour.
T. P. COWEN	Certificate of Honour.
A. F. STABB	Certificate of Honour.
A. C. LANKESTER	Certificate of Honour.
J. H. DEWHUR-T	Certificate of Honour.

RESIDENT ACCOUCHEURS.

F. FAWSETT	Certificate of Honour.
G. R. ANDERSON	Certificate of Honour.
G. E. ANSON	Certificate of Honour.
A. N. BOYCOTT	Certificate of Honour.

SENIOR OBSTETRIC CLERKS.

H. B. OSBURN	Certificate of Honour.
HAROLD LOW	Certificate of Honour.

CLINICAL ASSISTANTS IN THE SPECIAL DEPARTMENTS.

W. G. LAWS	} Eye {	...	...	...	Certificate of Honour.
C. F. HARFORD-BATTERSBY		...	...	...	Certificate of Honour.
A. E. PREST HUGHES		...	...	...	Certificate of Honour.
T. W. LAMBERT		...	...	...	Certificate of Honour.
S. H. JONES	} Skin {	...	...	...	Certificate of Honour.
W. F. MANNERS		...	...	...	Certificate of Honour.
R. LAKE	} Throat... {	...	...	...	Certificate of Honour.
G. H. WICKHAM		...	...	...	Certificate of Honour.

SOLLY MEDAL AND PRIZE.

C. WYMAN	Medal and Prize, £20.
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FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

A. KING	{ The Treasurer's Gold Medal.
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FEES FOR ATTENDANCE ON THE LECTURES AND ON THE PRACTICE OF THE HOSPITAL.

~~~~~ COMPOSITION FEES.

The Composition Fee to Hospital Practice and Lectures may be paid in several ways :

- 1st. One Hundred and Twenty-five Guineas on entrance ;
- 2nd. One Hundred and Thirty-eight pounds in two payments, £75 on entrance, and £63 at the beginning of the next year ;
- 3rd. Payment by three instalments, viz., of £65 at the beginning of the first year, £50 at the beginning of the second year, and £30 at the beginning of the third year.

Gentlemen entering at St. Thomas's in the second* year of their Studentship pay £65 for that year ; £25 for the third year ; or upon paying £85 on entrance, they will become "Perpetual" Students. Students entering in their third year pay £40 ; for the next year £20, or one payment of £55 on entrance will entitle them to be "Perpetual" Students.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £55, or by instalments, £50 for the first year, and £10 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 34) has to be paid.

N.B.—It should be understood that the Composition or "Perpetual" Fees are intended to cover unlimited attendance on Lectures and Hospital Practice. If, however, a student fail to pass the several professional examinations within periods deemed reasonable by the School authorities, his rights as a Student may be suspended or determined at any time by the School Committee, with the approval of the Treasurer.

Regularly qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £12 10s. for unlimited attendance ; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 34).

* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School, will be considered to be first year's Students on joining the Medical School, as the time previously spent does not count until three years' Lectures have been attended, but a deduction from the Perpetual Fee will be allowed in such cases.

NOTE.—Cheques may be made payable to the Medical Secretary, and crossed "London and County Bank, Lambeth."

The Courses may be attended separately on the following terms, which entitle to Certificates for such Attendances.

For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.

Three months	£15	Twelve months	£40
Six ditto	£26	"Perpetual"	£55
Nine ditto	£35		

Dental Practice, 1 year 2 Gs., "Perpetual" 3 Gs.

Midwifery Practice, 5 Gs.

Ophthalmic Practice, 2 Gs.

For Lectures and Demonstrations.

1 Course, "Perpetual."

Medicine, Surgery, Physiology, Anatomy, Chemistry each 7 Gs. .. 10 Gs.

Midwifery 5 " .. 6 "

Materia Medica, Botany, Physics, Comparative Anatomy, } 4 " .. 5 "

Forensic Medicine, and Pathological Anatomy each 2 " .. 3 "

Mental Diseases, Diseases of the Eye, Public Health each 2 " .. 3 "

* Practical Chemistry, Practical Surgery, Practical } 6 " .. —

Physiology, Pathological Anatomy including the } each

Practical Course each

Dissections, three months 4 Gs., six months 6 Gs., "Perpetual" 10 Gs.

EXTRA CHARGES.

Students who pay a Composition Fee are now supplied with chemicals and materials for one course of Practical Chemistry and Physiology without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz.:

Those attending Practical Physiology and Physiological Demonstrations must provide themselves with Microscopes.

Students Dissecting pay for the "parts" they dissect at fixed rates, which are notified in the Library.

Each Clinical Clerk must provide himself with a Stethoscope and Registering Clinical Thermometer. Each Dresser is required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver or Plated Catheters.

The fees for instruction in Vaccination and in Practical Pharmacy are not included in the Composition Fees, as it is open to students to obtain instruction in these subjects elsewhere. But Dr. CORY is authorised by the Local Government Board to give certificates for proficiency in Vaccination (fee, 1 guinea); and Practical Pharmacy is taught by the Hospital Pharmaceutist to those students who require it (fee, 3 guineas for 3 months). Application to be made to the Medical Secretary.

SPECIAL COURSES.

Operative Surgery.—A voluntary class will be formed by Messrs. PITTS and BALLANCE during the Summer, and at other convenient times, for Gentlemen who wish to prepare for the Fellowship or other Examinations. This course will not include Operations on the Eye-ball. Fee, £5 5s.

Operative Surgery of the Eye.—A voluntary class will be formed by Mr. LAWFORD during the Summer. Fee, £2 2s.

Advanced Anatomy.—Voluntary classes for the M.B. Examinations of Oxford and Cambridge and for the Fellowship of the Royal College of Surgeons will be formed by the Lecturers on Anatomy, commencing in the months of February and October. Fee, £6 6s.

Laryngology.—A special course is given by Dr. SEMON during the Winter Session. Fee for Gentlemen, not Students of the Hospital, 3 Gs.

Special Courses of Obstetric Demonstrations are given by Dr. CORY throughout the year. Fee, £3 3s.

Public Health and Sanitary Science.—Lectures are open to Gentlemen, not Students of the Hospital, and instruction will be given specially to Candidates for Certificates and Examinations in Sanitary Science and Hygiene. A special course of Laboratory Instruction is given in May and November Fee, £6 6s.

* These amounts do not include the extra charges in the Practical Courses for Materials, Instruments, &c.

UNIVERSITY OF LONDON.
PRELIMINARY SCIENTIFIC AND INTERMEDIATE M.B. CLASSES.

PRELIMINARY SCIENTIFIC EXAMINATION.

Special instruction in the subjects required for this Examination is given in the form of (a) Lectures and (b) Classes, from October to July.

		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Botany.	{ Lectures (Summer)	—	10.0	10.0	—	—	10.0
A. W. BENNETT, M.A.	{ Classes (Winter & Summer)	—	—	11.0	—	—	—
	{ Lectures (Winter)	—	1030	—	1030	1030	—
	{ Classes (Winter)	—	1130	—	—	—	—
Chemistry.	{ (Summer)	—	11.0	—	12.0	—	—
A. J. BERNAYS, Ph.D.	{ Practical (Winter)	—	—	—	12 or 1130	—	—
	{ (Summer)	—	—	—	Laboratory open daily	—	—
Physics.	{ Lectures (Winter)	—	—	—	—	—	12.0
W.H.STONE, M.A. M.B.	{ Classes (January to July)	—	—	—	—	3.0	—
Zoology.	{ Lectures (Summer)	9.0	—	—	—	9.0	—
G. GULLIVER, M.A.,	{ Classes (Winter)	—	—	1.30	—	—	—
M.B.	{ (Summer)	—	—	—	—	—	11.0

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class, and Two Guineas are charged for materials.

Fee, inclusive of Practical Chemistry *Sixteen Guineas.*

Fee for any single subject *Five Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers.

In the Practical Classes of Botany and Zoology, each Student has the opportunity of dissecting the chief types.

INTERMEDIATE EXAMINATION IN MEDICINE.

Special Classes in the subjects required for the July Examination are held from January to July.

		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Anatomy.	{ W. ANDERSON, F.R.C.S. }	Twice a week					
	{ G. H. MAKINS, F.R.C.S. }						
Materia Medica and Pharmaceutical Chemistry.	{ W. B. HADDEN, M.D., LOND. }	Once a week in the Summer.					
Organic Chemistry	{ A. J. BERNAYS.	—	10	11	—	—	—
Organic Analysis	{ Ph.D.	—	—	—	—	—	10
Physiology.	{ S. M. COFEMAN, M.A., }	—	—	—	—	{ Winter 2 Summer 1 }	—
	{ M.D. Cantab. }	—	—	—	—		

Fee to Students of the Hospital inclusive of

Organic Analysis and Chemicals* *Nine Guineas.*

To others ditto *Twelve Guineas.*

Fee for any Single Subject *Three Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers (except Chemicals, for which full fee is charged).

* Instruction and Practice in Organic Analysis is essential for this Examination.

N.B.—Private Classes are held for the Final M.B. Examination.

THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

Curator.—S. G. SHATTOCK, ESQ., F.R.C.S.

Among the earliest contributors to this Museum were Mr. CLINE, Sir A. COOPER, Mr. TRAVERS, and Mr. TYRRELL.

The Printed Catalogue of the Museum consists of three octavo volumes: in the first volume, edited by Mr. JOHN F. SOUTH, are described the preparations of Normal Human, Microscopical, and Comparative Anatomy; and the 2nd and 3rd volumes, edited by Mr. SYDNEY JONES, contain descriptions of the specimens illustrative of Pathological Anatomy. A Second Edition of the Pathological Catalogue by Mr. SHATTOCK is in course of preparation. The first part of this, including the Injuries and Diseases of Bones and Joints is already published.

The COLLECTION of HUMAN ANATOMY consists of a Physiological and a Pathological Department: the former contains, besides wax models and casts, a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System, the Organs of Reproduction, and the tissues.

The Pathological Division is very rich, containing above 4000 Specimens, arranged in thirty-seven Sections, as follows:—

SECT.

- A. Injuries of Bone: Fractures.
- B. Injuries of Joints: Dislocations.
- C. Diseases of Bone.
- D. Diseases of Joints.
- E. Diseases of the Spinal Column
- F. Injuries and Diseases of the Muscular System.
- G. Injuries and Diseases of the Eye.
- H. Injuries and Diseases of the Ear.
- I. Injuries and Diseases of the Nose, Antrum, &c.
- K. Injuries and Diseases of the Skin and Subcutaneous Cellular Tissue.
- L. Injuries of the Skull.
- M. Injuries of the Spine.
- N. Injuries and Diseases of the Nervous System.
- O. Injuries and Diseases of Mouth, Fauces, Pharynx, and the Esophagus.
- P. Injuries and Diseases of the Stomach.
- Q. Injuries and Diseases of the Intestines and Peritoneum.
- R. Intussusception, Internal Strangulation, and Hernia.
- S. Injuries and Diseases of the Liver.
- T. Diseases of the Pancreas and Salivary Glands.
- U. Injuries and Diseases of the Spleen.
- V. Diseases of Thyroid, Thymus, and Suprarenal Capsules.

SECT.

- W. Injuries and Diseases of the Respiratory Apparatus.
- X. Injuries and Diseases of the Heart and Pericardium.
- Y. Injuries and Diseases of Arteries and Veins.
- Z. Diseases of Lymphatic and Lacteal Vessels and Glands.
- AA. Injuries and Diseases of the Kidneys, and Ureters.
- BB. Injuries and Diseases of the Bladder.
- CC. Diseases of the Prostate Gland and Vesiculae Seminales, Urinary and Prostatic Calculi.
- DD. Injuries and Diseases of the Penis and Urethra.
- EE. Injuries and Diseases of the Testicles and Scrotum.
- FF. Diseases of the Ovaries and Fallopian Tubes.
- GG. Injuries and Diseases of the Uterus, Vagina, and external organs.
- HH. Diseases and displacements of the Ovary.
- II. Diseases of the Breast.
- KK. Tumours and other allied Morbid Growths.
- LL. Malformations.
- MM. Wax Models and Casts.

BONES, JOINTS, &c.—Amongst the specimens illustrating Injuries of Bones and Joints, are nearly all those described and figured in Sir A. Cooper's Treatise on 'Dislocations and Fractures of the Joints, and in Cooper's and Travers's 'Surgical Essays.'

This section has been enriched by Sir William MacCormac, who presented numerous specimens of gunshot fractures, &c., obtained from cases under his care during the Franco-German War (1870).

Sir A. Cooper's preparations, illustrating repair after fracture, are contained in this Section.

EYE.—This Section was arranged by Mr. Dixon, and contains specimens described and figured by Sir A. Cooper, Mr. Travers, and Mr. Saunders. A number of Specimens are also kept for purposes of Demonstration in the Eye Department.

SKIN.—Several Tumours are contained in this Section, as well as, amongst others, the horn, ten inches in length, removed from a man's forehead by Sir A. Cooper.

HEAD, SPINE, NERVOUS SYSTEM.—Showing all kinds of Injuries to the Skull; Spinal Injuries, which have been subjected to operation by Cline, Tyrrell, and South, as well as every variety, frequent and rare, of disease of the Nervous System.

INTESTINES AND PERITONEUM.—Travers's Preparations, illustrating 'The Process of Nature in repairing Injuries of the Intestines,' are contained in this Section.

HERNIA.—This Section contains nearly all the Preparations figured and described in 'Cooper's Hernia.' Besides the more common varieties of Hernia, there are Specimens of Thyroideal, Ischiatic, Perineal, Phrenic, and other rare forms of Hernia.

LIVER.—Besides every variety of Hepatic Disease, this Section contains a large number of Biliary Calculi, many of which have been presented by Dr. Ord. Some specimens of Actinomycosis are also contained in it.

RESPIRATORY AND VASCULAR SYSTEMS.—Amongst these Preparations are two Specimens, showing ligature of the Abdominal Aorta; one of them the case of Sir A. Cooper; the other that of Mr. John F. South. There are also Specimens of spontaneous obliteration of the Aorta.

The Preparations illustrative of Travers's experiments on Arteries and Veins are in the collection.

There are also very interesting Specimens of Diseased Heart, described by Dr. Wells and Dr. Elliotson.

KIDNEYS.—Described and arranged by Mr. Simon.

URINARY CALCULI.—250 in number—analysed by Mr. Heisch and Dr. Bernays.

TESTES.—Most of the preparations figured in Sir A. Cooper's work 'On the Testis,' are contained in this Section.

MALFORMATIONS.—This Section contains Specimens of Spina Bifida, Acephalous and Double monsters, Ectopia Cordis, Malformations of the Heart, Urinary, and Generative Organs. Most of them have been elaborately described by Mr. R. D. Grainger, and the malformations of the heart are referred to by Dr. Farre and Dr. Peacock in their works. There are also very interesting specimens of malformation described by Dr. Bristowe, Mr. Le Gros Clark, and Mr. Sydney Jones.

The Museum contains a considerable number of valuable Ethnological Specimens.

THE COLLECTION OF COMPARATIVE ANATOMY comprises about 700 Preparations, some of them very rare and valuable.

A large number of these Specimens were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons.

THE CABINETS OF MICROSCOPICAL ANATOMY, which are under the charge of the Demonstrator of Practical Physiology, contain upwards of 2,000 injected and other Specimens of normal and morbid Histology, parasites, urinary deposits, &c. These include the Preparations made by Mr. Rainey, to illustrate the Histological Course of Lectures; and others described by him in Papers published in the Philosophical, Medico-Chirurgical, and Microscopical Transactions, and in various scientific works. This collection has been considerably enlarged by the addition of a series of specimens presented by Dr. Acland, which includes the chief forms of micro-organisms found in diseased tissues, as well as specimens illustrating the development of the Chick. The specimens are available for use by students who wish to examine them, subject to such regulations as may be deemed necessary.

THE MATERIA MEDICA MUSEUM contains in cases a complete collection of all the chemicals and organic substances included in the British Pharmacopœia of 1885; all these are named and numbered.

A second collection of all the chief medicinal substances is placed in drawers, and is freely accessible to students.

A large and very fine collection of dried medicinal plants, named according to the latest nomenclature, is displayed on the walls of the Museum.

The Museum is under the conjoint superintendence of Dr. Hadden and Mr. Shattock.

THE COLLECTION OF CHEMISTRY AND MINERALOGY is under the Superintendence of Dr. Bernays, who presented the larger part of the Specimens contained in it. It is displayed with the Collection of Materia Medica.

St. Thomas's Hospital.

MEDICAL AND PHYSICAL SOCIETY.

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This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8.30 P.M., and terminate not later than 10 P.M.

The soirée, to which past and present students are invited, will be held in May or June, in the Grand Entrance Hall and Corridor of the Hospital.

Further information can be obtained of the Hon. Secretaries.

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# SEPTEMBER, 1890.

|    |    |                                                                |
|----|----|----------------------------------------------------------------|
| 1  | M  |                                                                |
| 2  | TU | House Officers, &c., commence duty. [Dresserships.             |
| 3  | W  | Last day for applications for Clinical Clerkships and          |
| 4  | TH |                                                                |
| 5  | F  |                                                                |
| 6  | S  |                                                                |
| 7  | S  | Fourteenth Sunday after Trinity.                               |
| 8  | M  |                                                                |
| 9  | TU |                                                                |
| 10 | W  |                                                                |
| 11 | TH |                                                                |
| 12 | F  |                                                                |
| 13 | S  |                                                                |
| 14 | S  | Fifteenth Sunday after Trinity.                                |
| 15 | M  |                                                                |
| 16 | TU |                                                                |
| 17 | W  | Meeting to appoint Clinical Clerks and Dressers.               |
| 18 | TH |                                                                |
| 19 | F  |                                                                |
| 20 | S  |                                                                |
| 21 | S  | Sixteenth Sunday after Trinity. St. Matthew.                   |
| 22 | M  | Last day for Entry for B.Sc. Exam., Univ. Lond.                |
| 23 | TU |                                                                |
| 24 | W  |                                                                |
| 25 | TH |                                                                |
| 26 | F  |                                                                |
| 27 | S  |                                                                |
| 28 | S  | Seventeenth Sunday after Trinity.                              |
| 29 | M  | Michaelmas Day. Last day for Entry for M.B. Exam., Univ. Lond. |
| 30 | TU | Last day for Essay for Grainger Prize.                         |

*Preliminary Examination in Arts of the Society of Apothecaries held this month.  
The Hospital Entrance Science Scholarships Examination takes place during  
the last week of this month.*

# OCTOBER, 1890.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | W  | Distribution of Prizes, 3 P.M. Annual Dinner. |
| 2  | Th |                                               |
| 3  | F  | Meeting of Library Committee.                 |
| 4  | S  |                                               |
| 5  | S  | Eighteenth Sunday after Trinity.              |
| 6  | M  |                                               |
| 7  | Tu | Clinical Clerks and Dressers commence duty.   |
| 8  | W  |                                               |
| 9  | Th |                                               |
| 10 | F  |                                               |
| 11 | S  |                                               |
| 12 | S  | Nineteenth Sunday after Trinity.              |
| 13 | M  |                                               |
| 14 | Tu |                                               |
| 15 | W  |                                               |
| 16 | Th |                                               |
| 17 | F  |                                               |
| 18 | S  | St. Luke.                                     |
| 19 | S  | Twentieth Sunday after Trinity.               |
| 20 | M  | Univ. Lond. B.Sc. Exam.                       |
| 21 | Tu |                                               |
| 22 | W  |                                               |
| 23 | Th |                                               |
| 24 | F  |                                               |
| 25 | S  |                                               |
| 26 | S  | Twenty-first Sunday after Trinity.            |
| 27 | M  | Univ. Lond. M.B. Exam.                        |
| 28 | Tu | St. Simon and St. Jude.                       |
| 29 | W  |                                               |
| 30 | Th |                                               |
| 31 | F  |                                               |

*The Registration and Museum Committees meet during this month.*

*The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.*

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

# NOVEMBER, 1890.

|    |    |                                                                                     |
|----|----|-------------------------------------------------------------------------------------|
| 1  | S  | All Saints.                                                                         |
| 2  | §  | Twenty-second Sunday after Trinity.                                                 |
| 3  | M  | Entry for M.D. and M.S. Exams. Univ. Lond.                                          |
| 4  | TU | Notice—29th, last day for applications for Medical and<br>[Surgical Registrarships. |
| 5  | W  | Last day for applications for House Offices, &c.*                                   |
| 6  | TH |                                                                                     |
| 7  | F  |                                                                                     |
| 8  | S  |                                                                                     |
| 9  | §  | Twenty-third Sunday after Trinity. Prince of Wales                                  |
| 10 | M  | [born, 1841.                                                                        |
| 11 | TU |                                                                                     |
| 12 | W  | Meeting to appoint House Officers, &c.                                              |
| 13 | TH |                                                                                     |
| 14 | F  |                                                                                     |
| 15 | S  |                                                                                     |
| 16 | §  | Twenty-fourth Sunday after Trinity.                                                 |
| 17 | M  | Last day for Entry for B.S. Exam., Univ. Lond.                                      |
| 18 | TU | Univ. Lond. M.B. Pass List published.                                               |
| 19 | W  | Univ. Lond. M.B. Honours Exam.                                                      |
| 20 | TH |                                                                                     |
| 21 | F  |                                                                                     |
| 22 | S  | Univ. Lond. B.Sc. Pass List published.                                              |
| 23 | §  | Twenty-fifth Sunday after Trinity.                                                  |
| 24 | M  |                                                                                     |
| 25 | TU |                                                                                     |
| 26 | W  |                                                                                     |
| 27 | TH |                                                                                     |
| 28 | F  |                                                                                     |
| 29 | S  | Last day for applications for Medical and Surgical<br>[Registrarships.              |
| 30 | §  | First Sunday in Advent. Saint Andrew.                                               |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# DECEMBER, 1890.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | M  | Univ. Lond. M.D. and M.S. Exam. [B.S. Exam.           |
| 2  | TU | House Officers, &c., commence duty. Univ. Lond        |
| 3  | W  | Last day for applications for Clinical Clerkships and |
| 4  | TH | [Dresserships.                                        |
| 5  | F  |                                                       |
| 6  | S  |                                                       |
| 7  | S  | Second Sunday in Advent.                              |
| 8  | M  |                                                       |
| 9  | TU |                                                       |
| 10 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 11 | TH |                                                       |
| 12 | F  | Univ. Lond. M.D. List published.                      |
| 13 | S  |                                                       |
| 14 | S  | Third Sunday in Advent.                               |
| 15 | M  | Last day for Entry for Matriculation Univ. Lond.      |
| 16 | TU |                                                       |
| 17 | W  |                                                       |
| 18 | TH | 1st Sessional Examination commences.                  |
| 19 | F  |                                                       |
| 20 | S  |                                                       |
| 21 | S  | Fourth Sunday in Advent. Saint Thomas.                |
| 22 | M  | Last day for Entry for Prel. Sci. and Int. Med. Exam. |
| 23 | Tu | [Univ. Lond.                                          |
| 24 | W  |                                                       |
| 25 | TH | CHRISTMAS DAY.                                        |
| 26 | F  | Saint Stephen.                                        |
| 27 | S  | Saint John.                                           |
| 28 | S  | First Sunday after Christmas. Holy Innocents.         |
| 29 | M  |                                                       |
| 30 | Tu |                                                       |
| 31 | W  |                                                       |

*University of Cambridge First, Second, and Third M.B. Examinations are held this month.*

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

*Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.*

# JANUARY, 1891.

|    |    |                                                 |
|----|----|-------------------------------------------------|
| 1  | TH | Circumcision.                                   |
| 2  | F  | Meeting of Library Committee.                   |
| 3  | S  |                                                 |
| 4  | S  | Second Sunday after Christmas.                  |
| 5  | M  |                                                 |
| 6  | TU | Epiphany. Clinical Clerks and Dressers commence |
| 7  | W  | duty.                                           |
| 8  | TH |                                                 |
| 9  | F  |                                                 |
| 10 | S  |                                                 |
| 11 | S  | First Sunday after Epiphany.                    |
| 12 | M  | Univ. Lond. Matriculation Examination.          |
| 13 | TU |                                                 |
| 14 | W  |                                                 |
| 15 | TH |                                                 |
| 16 | F  |                                                 |
| 17 | S  |                                                 |
| 18 | S  | Second Sunday after Epiphany.                   |
| 19 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam. and |
| 20 | TU | Intermd. Exam. in Medicine.                     |
| 21 | W  |                                                 |
| 22 | TH |                                                 |
| 23 | F  |                                                 |
| 24 | S  |                                                 |
| 25 | S  | Septuagesima Sunday. Conversion of St. Paul.    |
| 26 | M  |                                                 |
| 27 | TU |                                                 |
| 28 | W  |                                                 |
| 29 | TH |                                                 |
| 30 | F  |                                                 |
| 31 | S  |                                                 |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*



# FEBRUARY, 1891.

|    |    |                                                    |
|----|----|----------------------------------------------------|
| 1  | S  | Sexagesima Sunday.                                 |
| 2  | M  |                                                    |
| 3  | TU |                                                    |
| 4  | W  | Last day for applications for House Offices, &c.*  |
| 5  | TH |                                                    |
| 6  | F  |                                                    |
| 7  | S  |                                                    |
| 8  | S  | Quinquagesima Sunday.                              |
| 9  | M  |                                                    |
| 10 | TU | Queen Victoria married, 1840.                      |
| 11 | W  | Ash Wednesday. Univ. Lond. Prel. Sci. (M.B.) List  |
| 12 | TH | [published. Meeting to appoint House Officers, &c. |
| 13 | F  |                                                    |
| 14 | S  |                                                    |
| 15 | S  | First Sunday in Lent.                              |
| 16 | M  |                                                    |
| 17 | TU | Univ. Lond. Int. Med. Pass List published.         |
| 18 | W  | Univ. Lond. Matric. List published.                |
| 19 | TH |                                                    |
| 20 | F  |                                                    |
| 21 | S  |                                                    |
| 22 | S  | Second Sunday in Lent.                             |
| 23 | M  |                                                    |
| 24 | TU | St. Matthias.                                      |
| 25 | W  |                                                    |
| 26 | TH |                                                    |
| 27 | F  |                                                    |
| 28 | S  |                                                    |

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# MARCH, 1891.

|    |    |                                                                                        |
|----|----|----------------------------------------------------------------------------------------|
| 1  | §  | Third Sunday in Lent.                                                                  |
| 2  | M  |                                                                                        |
| 3  | TU | House Officers, &c., commence duty.                                                    |
| 4  | W  | Last day for applications for Clinical Clerkships and                                  |
| 5  | TH | [Dresserships.                                                                         |
| 6  | F  |                                                                                        |
| 7  | S  |                                                                                        |
| 8  | §  | Fourth Sunday in Lent.                                                                 |
| 9  | M  |                                                                                        |
| 10 | TU | Prince of Wales married, 1863.                                                         |
| 11 | W  | Meeting to appoint Clinical Clerks and Dressers.                                       |
| 12 | TH |                                                                                        |
| 13 | F  |                                                                                        |
| 14 | S  |                                                                                        |
| 15 | §  | Fifth Sunday in Lent.                                                                  |
| 16 | M  |                                                                                        |
| 17 | TU |                                                                                        |
| 18 | W  |                                                                                        |
| 19 | TH |                                                                                        |
| 20 | F  |                                                                                        |
| 21 | S  | Sessional Examination commences.                                                       |
| 22 | §  | Palm Sunday.                                                                           |
| 23 | M  |                                                                                        |
| 24 | TU |                                                                                        |
| 25 | W  | Annunciation. LADY DAY.                                                                |
| 26 | TH |                                                                                        |
| 27 | F  | Good Friday.                                                                           |
| 28 | S  |                                                                                        |
| 29 | §  | EASTER SUNDAY.                                                                         |
| 30 | M  | Bank Holiday.                                                                          |
| 31 | TU | Registrar's Report for last year due. Last day for<br>[Reports for Solly Medal (1892). |

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

# APRIL, 1891.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | W  |                                               |
| 2  | Th |                                               |
| 3  | F  | Meeting of Library Committee.                 |
| 4  | S  |                                               |
| 5  | S  | First Sunday after Easter. Low Sunday.        |
| 6  | M  | Last day for Entry for M.B. Exam. Univ. Lond. |
| 7  | Tu | Clinical Clerks and Dressers commence duty.   |
| 8  | W  |                                               |
| 9  | Th |                                               |
| 10 | F  |                                               |
| 11 | S  |                                               |
| 12 | S  | Second Sunday after Easter.                   |
| 13 | M  |                                               |
| 14 | Tu |                                               |
| 15 | W  |                                               |
| 16 | Th |                                               |
| 17 | F  |                                               |
| 18 | S  |                                               |
| 19 | S  | Third Sunday after Easter.                    |
| 20 | M  |                                               |
| 21 | Tu |                                               |
| 22 | W  |                                               |
| 23 | Th |                                               |
| 24 | F  |                                               |
| 25 | S  | St. Mark.                                     |
| 26 | S  | Fourth Sunday after Easter.                   |
| 27 | M  |                                               |
| 28 | Tu |                                               |
| 29 | W  |                                               |
| 30 | Th |                                               |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Examinations for the Mead and Cheselden Medals take place this month.*

*The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.*

*The Registration Committee meets during this month.*

# MAY, 1891.

|    |    |                                                                                                                                          |
|----|----|------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | F  | St. Philip and St. James. Summer Session commences.                                                                                      |
| 2  | S  |                                                                                                                                          |
| 3  | §  | Fifth Sunday after Easter. Rogation Sunday.<br>Univ. Lond. M.B. Exam.                                                                    |
| 4  | M  |                                                                                                                                          |
| 5  | TU | Last day for applications for House Offices, &c.*                                                                                        |
| 6  | W  |                                                                                                                                          |
| 7  | TH | Ascension Day. Holy Thursday.                                                                                                            |
| 8  | F  |                                                                                                                                          |
| 9  | S  |                                                                                                                                          |
| 10 | §  | Sunday after Ascension Day.<br>First Stone of St. Thomas's New Hospital laid by H.M.<br>[the Queen, 1868. Last day for Entry for Matric. |
| 11 | M  |                                                                                                                                          |
| 12 | TU | Meeting to appoint House Officers, &c. [Univ. Lond.                                                                                      |
| 13 | W  |                                                                                                                                          |
| 14 | TH |                                                                                                                                          |
| 15 | F  |                                                                                                                                          |
| 16 | S  |                                                                                                                                          |
| 17 | §  | WHIT SUNDAY.<br>Bank Holiday. No Lectures.                                                                                               |
| 18 | M  |                                                                                                                                          |
| 19 | TU |                                                                                                                                          |
| 20 | W  |                                                                                                                                          |
| 21 | TH |                                                                                                                                          |
| 22 | F  |                                                                                                                                          |
| 23 | S  |                                                                                                                                          |
| 24 | §  | TRINITY SUNDAY. Queen Victoria born, 1819.                                                                                               |
| 25 | M  |                                                                                                                                          |
| 26 | TU | Univ. Lond. M.B. Pass List published.                                                                                                    |
| 27 | W  |                                                                                                                                          |
| 28 | TH |                                                                                                                                          |
| 29 | F  |                                                                                                                                          |
| 30 | S  |                                                                                                                                          |
| 31 | §  | First Sunday after Trinity.                                                                                                              |

*Examinations for the Fellowship of the Royal College of Surgeons of England and Univ. Camb. Third M.B. Exam. held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# JUNE, 1891.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | M  |                                                       |
| 2  | TU | House Officers, &c., commence duty.                   |
| 3  | W  | Last day for applications for Clinical Clerkships and |
| 4  | TH | [Dresserships.                                        |
| 5  | F  |                                                       |
| 6  | S  |                                                       |
| 7  | §  | Second Sunday after Trinity.                          |
| 8  | M  | Univ. Lond. Matric. Exam.                             |
| 9  | TU |                                                       |
| 10 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 11 | TH | St. Barnabas.                                         |
| 12 | F  |                                                       |
| 13 | S  |                                                       |
| 14 | §  | Third Sunday after Trinity.                           |
| 15 | M  | Last day for Entry for Int. Med. Exam. Univ. Lond.    |
| 16 | TU |                                                       |
| 17 | W  |                                                       |
| 18 | TH |                                                       |
| 19 | F  |                                                       |
| 20 | S  | Queen's Accession.                                    |
|    |    | [Hospital opened by H. M. the Queen, 1871.            |
| 21 | §  | Fourth Sunday after Trinity. New St. Thomas's         |
| 22 | M  | Last day for Entry for Prel. Sci. (M.B.) Exam. Univ.  |
| 23 | TU | [Lond.                                                |
| 24 | W  | St. John Baptist. Midsummer Day.                      |
| 25 | TH |                                                       |
| 26 | F  |                                                       |
| 27 | S  |                                                       |
| 28 | §  | Fifth Sunday after Trinity. Queen Victoria crowned,   |
| 29 | M  | St. Peter. [1838.                                     |
| 30 | TU |                                                       |

*The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.*

*Doctor of Science Examination at London University takes place within the first 21 days of June.*

*Univ. Camb. First and Second M.B. Examinations are held within the first 14 days of June.*

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

*Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.*

# JULY, 1891.

|    |    |                                                        |
|----|----|--------------------------------------------------------|
| 1  | W  |                                                        |
| 2  | Th |                                                        |
| 3  | F  | Meeting of Library Committee.                          |
| 4  | S  |                                                        |
| 5  | S  | Sixth Sunday after Trinity.                            |
| 6  | M  |                                                        |
| 7  | Tu | Clinical Clerks and Dressers commence duty.            |
| 8  | W  | Last day for applications for House Offices, &c., for  |
| 9  | Th | [September.*                                           |
| 10 | F  |                                                        |
| 11 | S  |                                                        |
| 12 | S  | Seventh Sunday after Trinity.                          |
| 13 | M  | Univ. Lond. Int. Med. Exam.                            |
| 14 | Tu |                                                        |
| 15 | W  | Meeting to appoint House Officers, &c., for September. |
| 16 | Th | [Univ. Lond. Matric. List published.                   |
| 17 | F  |                                                        |
| 18 | S  |                                                        |
| 19 | S  | Eighth Sunday after Trinity.                           |
| 20 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam.            |
| 21 | Tu |                                                        |
| 22 | W  |                                                        |
| 23 | Th |                                                        |
| 24 | F  | Sessional Examination commences.                       |
| 25 | S  | St. James.                                             |
| 26 | S  | Ninth Sunday after Trinity.                            |
| 27 | M  |                                                        |
| 28 | Tu |                                                        |
| 29 | W  |                                                        |
| 30 | Th |                                                        |
| 31 | F  |                                                        |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*



# AUGUST, 1891.

|    |                |                                               |
|----|----------------|-----------------------------------------------|
| 1  | S              |                                               |
| 2  | S              | Tenth Sunday after Trinity.                   |
| 3  | M              | Bank Holiday.                                 |
| 4  | T <sub>U</sub> |                                               |
| 5  | W              |                                               |
| 6  | T <sub>H</sub> |                                               |
| 7  | F              |                                               |
| 8  | S              |                                               |
| 9  | S              | Eleventh Sunday after Trinity.                |
| 10 | M              |                                               |
| 11 | T <sub>U</sub> | Univ. Lond. Int. Med. Pass List published.    |
| 12 | W              | Univ. Lond. Prelim. Sci. Pass List published. |
| 13 | T <sub>H</sub> |                                               |
| 14 | F              |                                               |
| 15 | S              |                                               |
| 16 | S              | Twelfth Sunday after Trinity.                 |
| 17 | M              |                                               |
| 18 | T <sub>U</sub> |                                               |
| 19 | W              |                                               |
| 20 | T <sub>H</sub> |                                               |
| 21 | F              |                                               |
| 22 | S              |                                               |
| 23 | S              | Thirteenth Sunday after Trinity.              |
| 24 | M              | St. Bartholomew.                              |
| 25 | T <sub>U</sub> |                                               |
| 26 | W              |                                               |
| 27 | T <sub>H</sub> |                                               |
| 28 | F              |                                               |
| 29 | S              |                                               |
| 30 | S              | Fourteenth Sunday after Trinity.              |
| 31 | M              |                                               |

SEPTEMBER, 1891.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | TU | House Officers, &c., commence duty. [Dresserships.    |
| 2  | W  | Last day for applications for Clinical Clerkships and |
| 3  | TH |                                                       |
| 4  | F  |                                                       |
| 5  | S  |                                                       |
| 6  | S  | Fifteenth Sunday after Trinity.                       |
| 7  | M  |                                                       |
| 8  | TU |                                                       |
| 9  | W  |                                                       |
| 10 | TH |                                                       |
| 11 | F  |                                                       |
| 12 | S  |                                                       |
| 13 | S  | Sixteenth Sunday after Trinity.                       |
| 14 | M  |                                                       |
| 15 | TU |                                                       |
| 16 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 17 | TH |                                                       |
| 18 | F  |                                                       |
| 19 | S  |                                                       |
| 20 | S  | Seventeenth Sunday after Trinity.                     |
| 21 | M  | St. Matthew.                                          |
| 22 | TU |                                                       |
| 23 | W  |                                                       |
| 24 | TH |                                                       |
| 25 | F  |                                                       |
| 26 | S  |                                                       |
| 27 | S  | Eighteenth Sunday after Trinity.                      |
| 28 | M  |                                                       |
| 29 | TU | Michaelmas Day.                                       |
| 30 | W  | Last day for Essay for Grainger Prize.                |

*Preliminary Examination in Arts of the Society of Apothecaries held this month.  
The Hospital Entrance Science Scholarships Examination takes place during  
the last week of this month.*



# LIST OF STUDENTS

WHO HAVE OBTAINED

## Honours in the Annual Examinations.

*w* refers to Winter and *s* to Summer Session.

*The Addresses are those given at the time of Entry.*

### ABBOTT (F. C.),\* Gorleston.

- w 1884-5, 1st Year Student, 1st Entrance Science Scholarship. The Wm. Tite Scholarship.  
 s 1885, 1st Year Student, 1st Coll. Prize.  
 w 1885-6, 2nd Year Student, The Peacock Scholarship.  
 w 1886-7, 3rd Year Student, 2nd tenure of Peacock Scholarship with 1st College Prize.  
 w 1887-8, 4th Year Student, The Cheselden Medal;  
 Treasurer's Gold Medal.

### ACLAND (T. D.),† Oxford.

- w 1877-8, 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.  
 w 1878-9, 4th Year Student, Mead Medal.

### ADDY (B.), West Deeping, Lincolnshire.

- 1869, 1st Year Student, 1st College Prize; Physical Society's 1st Year's Prize.  
 1870, 2nd Year Student, 1st Coll. Prize; Physical Society's 2nd Year's Prize.  
 1871, 3rd Year Student, 1st Coll. Prize; Prosector's Prize;  
 Treasurer's Gold Medal.

### ALLINGHAM (W.),‡ Bermondsey.

- 1852, Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.  
 1853, Midwifery, Hon. Cert.  
 1854, Medicine, Hon. Cert.; Descriptive Anatomy, Prize; Midwifery, Hon. Cert.; Physical Society's Essay, Prize; Surgery, Prize;  
 Physiology, Hon. Cert.  
 1855, Medicine, Prize; Descriptive Anatomy, Hon. Cert.; Physiology, Hon. Cert.; Clinical Medicine, President's Prize; Clinical Medicine, Treasurer's Prize.

\* Junior Demonstrator of Anatomy at St. Thomas's Hospital.

† Assistant Physician, St. Thomas's Hospital. Assistant Physician, Brompton Hospital.

‡ Surgeon to St. Mark's Hospital. Late Surgeon to Great Northern Hospital, formerly Surgical Tutor, Demonstrator of Anatomy, and Surgical Registrar at St. Thomas's Hospital.

§ Assistant Surgeon to, and Joint Lecturer on Anatomy at, St. Thomas's Hospital. Examiner in Anatomy for the Fellowship of the Royal College of Surgeons; formerly Demonstrator of Anatomy, and Surgical Registrar at St. Thomas's Hospital, late

### ANDERSON (W.),§ Clapham, Surrey.

- 1865, 1st Year Student, 3rd Coll. Prize.  
 1866, 2nd Year Student, 3rd Coll. Prize.  
 1867, 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal.

### ARMSTRONG (H. G.), Reading.

- s 1872, 1st Year Student, Hon. Cert.  
 w 1874, 3rd Year Student, 3rd Coll. Prize.

### ATKINSON (F. P.), Kew.

- 1861, 1st Year Matriculation Examination—Classics and Mathematics, Hon. Cert.

### ATKINSON (J.), Kirkby-Lonsdale.

- 1853, Chemistry, Hon. Cert.

### AVELING (C. T.), Shacklewell.

- 1863, Matriculation Examination—Physics and Natural History, 1st College Prize;  
 1st Year Student, 1st College Prize.  
 1864, 2nd Year Student, 2nd College Prize.  
 1865, 3rd Year Student, 3rd College Prize.

### BAILEY (J. H. T.), Greenwich.

- 1843, Materia Medica, Hon. Cert.

### BAIN (J.)

- 1855, Midwifery, Hon. Cert.

### BALLANCE (C. A.),|| Lower Clapton.

- w 1875-6, 1st Year Student, Hon. Cert.  
 w 1876-7, 3rd Year Student, 3rd College Prize, and Physical Society's 3rd Year's Prize;  
 1880, The Solly Medal and Prize.

### BANKS (A.), Clapham.

- w 1887-8, 1st Year Student, 1st Coll. Prize.

### BARKER (F. R.), Aldershot.

- w 1875, Prosector's Prize.

### BARRON (H. J.), Guilford Street, Russell Square.

- w 1877-8, 2nd Year Student, Prosector's Prize.

Examiner in Anatomy, Royal College of Physicians, Medical Officer to H.B.M. Legation in Japan, and Medical Director of the Japanese Naval Medical College, Tokio.

|| Assistant Surgeon for Diseases of the Ear, and Teacher of Practical Surgery, St. Thomas's Hospital, Senior Assistant Surgeon to the West London Hospital, Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street. Late Surgical Registrar and Demonstrator of Anatomy at St. Thomas's Hospital.

**BARWELL (R.),\* Norwich.**

1847. Medicine, Hon. Cert.;  
Midwifery, Hon. Cert.  
1848. Physical Society's Essay, Treasurer's Prize;  
Physiology and Anatomy, Hon. Cert.,  
Midwifery, Hon. Cert.;  
Dresser's Surg. Repts., Hon. Cert.  
1850. Clinical Medicine, Prize.

**BATESON (J. M.), Kirkby-Lonsdale.**

1855. Chemistry, Hon. Cert.

**BATTLE (W. H.),† Hanworth, Lincolnshire.**

- s 1874. Hon. Cert.  
w 1875. 2nd Year Student, 3rd College Prize.  
w 1876-7. 3rd Year Student, The First Solly Medal and Prize.

**BEAL (P.), Plymouth.**

1844. Chemistry, 2nd Prize.

**BEARDSLEY (A.), Shipley, Derby.**

1843. Midwifery, 2nd Prize.

**BEDFORD (R. J.),‡ Sleaford.**

1858. Midwifery, Hon. Cert.

**BENWELL (H. D.), Greenwich.**

1843. Chemistry, 2nd Prize.  
1845. Physiology and Anatomy, Medal.  
1847. Clinical Medical Reports, Prize;  
Gen. Proficiency, Trea. Medal.

**BELL (C. N.), Rochester.**

1867. 3rd Year Student, 3rd Coll. Prize.

**BELL (J. V.), Rochester.**

1859. 1st Year Student, Treasurer's 2nd Prize; Matriculation Examination—Classics and Mathematics, Hon. Cert.  
1860. 2nd Year Student, Hon. Cert.  
1861. 3rd Year Student, 3rd Coll. Prize.

**BERNAYS (H. L.), Chatham.**

- w 1873. Prosector's Prize.

**BERNAYS (A. V.), Great Stanmore.**

- s 1876. 1st Year Student, Hon. Cert.  
w 1880-81. 3rd Year Student, 1st Coll. Prize.

**BICKLE (L. W.), St. Leonard's-on-Sea.**

- s 1878. 1st Year Student, 3rd Coll. Prize;  
s 1879. 2nd Year Student, 1st Coll. Prize.

**BIDDLE (D.), Wotton-under-Edge.**

1860. 1st Year Student, Trea. Prize;  
Matriculation Exam.—Prize.  
1861. 2nd Year Student, Hon. Cert.  
1862. 3rd Year Student, Hon. Cert.

**BIDWELL (H.), Ely.**

- w 1883-4. 4th Year Student, qualified for Mead Medal.

**BIDWELL (L. A.), Lee.**

- w 1885-6. 4th Year Student, qualified for Cheselden Medal.

\* Consulting Surgeon to Charing Cross Hospital.

† Professor of Surgery and Pathology, Royal College of Surgeons. Assistant Surgeon to the Royal Free Hospital, and to the East London Hospital for Children and Women, Shadwell. Late Resident Assistant Surgeon, and Surgical Registrar, St. Thomas's Hospital.

‡ Late Assistant-Surgeon at the "Pread-night" Hospital Ship.

**BIRTWELL (H. H.), Enfield, Lancashire.**

1865. 3rd Year Student, Hon. Cert.

**BLACK (J.), Kentish Town.**

- w 1872. 2nd Year Student, Prosector's Prize.

**BLACK (W. S.), Chesterfield, Derby.**

1855. Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.

**BLACKETT (W. C.), Durham.**

1851. Descriptive Anatomy, Hon. Cert.

**BLADES (C. C.).**

1855. Midwifery, Hon. Cert.

**BONE (W.), Camberwell.**

1857. 1st Year Student, Trea. 1st Prize.  
1558. 2nd Year Student, Trea. 1st Prize.

**BONSER (J. H.), Sutton-in-Ashfield.**

1871. 3rd Year Student, 2nd Coll. Prize;  
Cheselden Medal.

**BOULGER (J.), Gravesend.**

1870. 1st Year Student, Sir Wm. Tite's Scholarship.

1871. 2nd Year, Sir W. Tite's Scholarship.

- w 1872. 3rd Year, Sir W. Tite's Scholarship.

**BOX (C. R.), Camberwell.**

- w 1885-6. 1st Year Student, 2nd Coll. Prize.

**BOWEN (E.), Llyn Gwair, Pembroke.**

1847. Descriptive and Surgical Anatomy, Hon. Cert.;

- Materia Medica, Hon. Cert.

1848. Descriptive and Surgical Anatomy, Hon. Cert.;

- Physiology and Anatomy, Hon. Cert.;

- Botany, Hon. Cert.;

- Comparative Anatomy, Hon. Cert.

**BOWN (J. Y.), America.**

1848. Descriptive and Surgical Anatomy, Hon. Cert.

**BOYCOTT (A. N.), Rugeley.**

- w 1887-8. 4th Year Student, qualified for Cheselden Medal.

**BRAKE (J.), Holt, Wilts.**

1851. Matriculation Scholarship, Hon. Cert.;

- Descriptive Anatomy, Hon. Cert.;

- 1st Year Student, Scholarship;

- Chemistry, Hon. Cert.

1852. 2nd Year Student, Scholarship;

- Physiology, Prize;

- Materia Medica, Hon. Cert.

- Botany, Hon. Cert.;

- Medicine, Hon. Cert.

1853. 3rd Year Student, Scholarship;

- Clinical Medicine, Trea. Prize;

- Midwifery, Prize;

- Forensic Medicine, Prize.

**BRISTOWE (J. S.),§ Camberwell.**

1847. Medicine, Hon. Cert.;

- Physiology and Anatomy, Hon. Cert.;

- Descriptive and Surgical Anatomy, Prize.

§ Physician to, and Joint Lecturer on Medicine at, St. Thomas's Hospital. Examiner in Medicine, University of Oxford. Late Lecturer on General Pathology.

- 1848 Descriptive and Surgical Anatomy, Hon. Cert.;  
Physiology and Anatomy, Prize;  
Practical Chemistry, Prize;  
Botany, Prize;  
Midwifery, Hon. Cert.;  
Comparative Anatomy, Prize;  
Surgery, Prize;  
General Proficiency, Treasurer's Medal.
- BRITTON (T.), Doncaster.**  
1861. 1st Year Student, Hon. Cert.
- BROCK (J.), Northwich.**  
w 1872. 1st Year Student, 2nd Coll. Prize.  
s 1872. Hon. Cert.
- BROCKATT (A. A.), Denmark Hill.**  
w 1844-5. 4th Year Student, qualified for the Mead Medal.
- BROWN (F. G.), London.**  
1860. 1st Year Student, Hon. Cert.  
1861. 2nd Year Student, 3rd Coll. Prize.  
1862. 3rd Year Student, 3rd Coll. Prize.
- BROWN (G. D.), Croydon.**  
1851. Physiology, Hon. Cert.;  
Botany, Prize;  
Surgery, Hon. Cert.;  
1852. Physiology, Hon. Cert.;  
Physical Society's Essay, Treasurer's Prize;  
Medicine, Hon. Cert.;  
Pathology, Prize.
- BROWN (T. J. E.), Dorchester.**  
1848. Practical Midwifery, Hon. Cert.
- BUCKNILL (E. R.), Bedford.**  
1855. 1st Year Student, Scholarship;  
Midwifery, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Materia Medica, Hon. Cert.
- BULL (J.), Norwood, Surrey.**  
1848. Midwifery, Hon. Cert.
- BURDEN (H.), Belfast.**  
w 1886-7. 1st Year Student, The William Tite Scholarship.  
s 1887. 1st Year Student, 2nd Coll. Prize.  
w 1887-8. 2nd Year Student, 2nd Coll. Prize.
- BUTLER (W.), Stoke Newington.**  
1845. Materia Medica, Hon. Cert.
- CAIGER (F. F.), Gloucester-st., S.W.**  
w 1879-80. 1st Year Student, 3rd Coll. Prize.  
w 1880-81. 2nd Year Student, 3rd Coll. Prize.  
w 1882-83. 4th Year, the Mead Medal.
- CANN (R. T.), Plymouth.**  
s 1882. 2nd Year Student. 1st Coll. Prize.  
s 1883. 3rd Year Student. 2nd Coll. Prize.
- CARPENTER (A.),\* Rothwell.**  
1848. Descriptive and Surgical Anatomy, Hon. Cert.;  
Chemistry, Prize;  
Materia Medica, Hon. Cert.;  
Matriculation Scholarship, Prize.  
1849. Physiology, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Descriptive Anatomy, 1st Prize;  
Medicine, 2nd Prize.
1850. Physiology, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Botany, Prize;  
Medicine, Prize;  
Surgery, Prize; [Medal].  
General Proficiency, Treasurer's
1851. (Accoucheur) Midwifery, Prize;  
Essay on Chorea, Mr. N. Smith's Prize.
1852. Surgical Reports, President's Prize;  
Medical Reports, Dr. Roots' Prize;  
Ophthalmic Reports, a Governor's Prize;  
Clinical Medicine, Senior Prize.
- CARPENTER (A. B.), Croydon.**  
w 1876-7. 1st Year Student, Hon. Cert.;
- CARPENTER (G. A.), Streatham.**  
w 1880-81. 1st Year Student, 3rd Coll. Prize.  
s 1881. 1st Coll. Prize.  
w 1881-2. 2nd Year Student, 3rd Coll. Prize.  
Prosecutor's Prize.
- CARR (J. T.), Bombay.**  
1844. Surgery, Prize.
- CASTLE (H.), Newport, I. of Wight.**  
w 1874-5. 1st Year Student, 2nd Coll. Prize.  
s 1875. 3rd College Prize.  
w 1876-7. Physical Society's 3rd Year's Prize.
- CAUDLE (A. W. W.), Henfield, Sussex.**  
1858. Clinical Medicine, Prize.
- CHALDECOTT (C. W.), Dorking.**  
1849. Descriptive Anatomy, Hon. Cert.  
Chemistry, Hon. Cert.;  
Materia Medica, 2nd Prize;  
1st Year Student, Scholarship.
1850. Physiology, Hon. Cert.  
Surgery, Prize.
1851. Physiology, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.;  
Physical Society's Essay, Treasurer's Prize;  
Surgery, Hon. Cert.;  
General Proficiency, Treasurer's Silver Medal.
- CHALDECOTT (T. A.), Newington**  
1848. Descriptive Surgical Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.; [Cert.];  
Botany, Hon. Cert.;  
Materia Medica, Hon. Cert.;  
Comparative Anat., Hon. Cert.;  
Matriculation Scholarship, Prize;  
Practical Chemistry, Hon. Cert.
1849. Physiology, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Surgery, 2nd Prize;  
Medicine, Hon. Cert.
1850. Physiology, Hon. Cert.;  
Forensic Medicine, Prize  
Pathology, Prize;  
Medicine, Hon. Cert.;  
Surgery, Hon. Cert.
- CHAPMAN (C. E.), Preston.**  
1855. Midwifery, Hon. Cert.;  
Materia Medica, Hon. Cert.
1857. Clinical Assistant, Prize;  
Physical Society's Essay, Prize.
- CHARPENTIER (A. E.).**  
1882-3. 4th Year, The Mead Medal Exam.,  
Special Mention and Hon. Cert.
- CHERRY (A. H.), Clapham.**  
1845. Clinical Medicine, Hon. Cert.

\* Examiner in State Medicine, University of Cambridge. Late Lecturer on State Medicine at St. Thomas's Hospital.



**CHIPPERFIELD (W. N.), Reading.**

1852. 1st Year Student, Scholarship;  
Descriptive Anatomy, Prize.
1853. 2nd Year Student, Scholarship.  
Physiology, Prize;  
Descriptive Anatomy, Prize;  
Midwifery, Prize;  
Physical Society's Essay, Prize;  
Medicine, Prize;  
Surgery, Prize.
1854. 3rd Year Student, Scholarship;  
Medicine, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Midwifery, Prize;  
Physical Society's Essay, Treasurer's Prize;  
Forensic Medicine, Prize;  
Chemistry, Hon. Cert.;  
Comparative Anatomy, Prize;  
Pathology, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
Clinical Medicine, Treasurer's Prize,  
Physiology, Prize; [Medal.  
General Proficiency, Treasurer's

**CLAPTON (E.),\* Stamford.**

1851. Matriculation Scholarship, Hon.  
Cert.;  
1st Year Student, 1st Scholarship;  
Descriptive Anatomy, Prize;  
Chemistry, Prize.
1852. 2nd Year Student, Scholarship;  
Physiology, Prize;  
Materia Medica, Prize;  
Botany, Prize;  
Medicine, Hon. Cert.
1853. 3rd Year Student, Scholarship;  
Physiology, Hon. Cert.; [Prize;  
Clinical Medicine, Treasurer's  
Midwifery, Hon. Cert.;  
Physical Society's Essay, Treasurer's Prize;  
Medicine, Hon. Cert.;  
Forensic Medicine, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Surgery, Hon. Cert.
1854. Ophthalmic Reports, Governor's  
Prize;  
Clinical Medicine, Mr. N. Smith's  
Prize.

**CLAPTON (W.), Stamford.**

1855. Midwifery, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Materia Medica, Prize.
1856. Clinical Medicine, Prize.
1853. Midwifery, Hon. Cert.

**CLARKE (A.), Dorking.**

1856. 1st Year Student, Treasurer's 2nd  
Prize.

**CLARK (J. H.), Jamaica.**

1867. 2nd Year Student, Physical Society's  
2nd Year's Prize.

**CLARKSON (J. W.), Surbiton.**

- w 1872. 2nd Year Student, 3rd Coll. Prize.
- w 1873. 3rd Year Student, 2nd Coll. Prize;  
Surgery and Surgical Anatomy,  
Hon. Cert.

**CLEGHORN (G.), Bedford.**

1872. 3rd Year Student, Hon. Cert.

**CLUTTERBUCK (M. C.), Bath.**

- w 1886-7. 1st year Student, 2nd Entrance  
Science Scholarship.

**COGGINS (T.), Hayford, Woodstock.**

1847. Chemistry, Hon. Cert.
1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;  
Midwifery, Hon. Cert.
1849. Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.
1850. Surgical Reports, Prize;  
(Accoucheur) Midwifery, Hon. Cert.

**COLBY (W. T.), Malton, York.**

1849. Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.

**COLLIER (T. P.), Worship Square.**

1847. Practical Midwifery, Prize.

**COMPLIN (E. J.), Charterhouse Sq.**

1851. Clinical Medicine, Prize;  
Medical Cases, President's Prize;  
Surgery, Hon. Cert.
1852. Midwifery, Hon. Cert.;  
Pathology, Hon. Cert.

**COOK (S. B.), Cape of Good Hope.**

- s 1883. 1st year Student, 2nd Coll. Prize.

**COOK (W.), Gainsboro'.**

1844. Chemistry, Hon. Cert.;  
Materia Medica, Hon. Cert.

**COOKE (C. W.), Regent's Park.**

- w 1883-4. 1st year Student, 1st Entrance  
Science Scholarship.

**COOKE (J.), Stamford.**

1855. Comparative Anatomy, Prize;  
Midwifery, Hon. Cert.;  
Physiology, Hon. Cert.

**COOPER (H. S.), Brightlingsea.**

- s 1887. 2nd Year Student, 2nd Coll. Prize.

**COPELAND (W. H. L.), South Kensington.**

- w 1887-8. 4th Year Student, qualified for  
the Mead Medal.

**CORY (R.),† Carlisle.**

1870. Physical Society's 3rd Year's Prize.

**COUSINS (J. W.), Portsea.**

1854. Descriptive Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.
1855. Surgery, Prize;  
Midwifery, Prize;  
Midwifery, Hon. Cert.
1856. Clinical Medicine, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal.

**COWEN (P.), Kennington.**

1862. 1st Year Student, 2nd Coll. Prize.
1863. 2nd Year Student, 2nd Coll. Prize.
1864. 3rd Year Student, 2nd Coll. Prize.

**COWEN (T. P.), Upper Holloway.**

- w 1884-5. 1st Year Student, † 1st and 2nd  
Coll. Prizes.
- s 1885. 1st Year Student, 2nd Coll. Prize
- w 1885-6. 2nd Year Student, 1st Coll. Prize.
- s 1886. 2nd Year Student, 1st College Prize.
- w 1886-7. 3rd Year Student, 2nd Coll. Prize.
- w 1887-8. 4th Year Student, qualified for  
the Mead Medal.

\* Late Physician to, and Lecturer on  
Materia Medica at, St. Thomas's Hospital.  
Physician to the Magdalen Hospital.

† Assistant Obstetric Physician to, and  
Joint Lecturer on Forensic Medicine at,  
St. Thomas's Hospital.

**Cox (E.), Maiden Newton, Dorsetshire.**

1866. 1st Year Student, 3rd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.

**COXWELL (C. F.), Brighton.**

1880. 4th Year Student, the Mead Medal.

**CRICK (S. A.), Cosby-hill, Leicester-shire.**

- s 1875. 1st Year Student, Hon. Cert.  
w 1875-6. Prosecutor's Prize.  
w 1876-7. 3rd Year Student, 3rd Coll. Prize.

**CROFT (J.),\* Clapton.**

1851. Descriptive Anatomy, Hon. Cert.  
1853. Midwifery, Hon. Cert.

**CROFTS (W. C.), Rowston, Lincoln.**

1855. Surgery, Hon. Cert.;  
Midwifery, Hon. Cert.

**CROSBY (T. B.), Gosberton, Lincoln.**

1851. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize;  
Surgery, Prize.  
1852. Physiology, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.;  
Forensic Medicine, Prize;  
Practical Chemistry, Prize;  
Surgery, Hon. Cert.;  
Surgery and Surgical Anatomy,  
Bronze Cheselden Medal;  
Comparative Anatomy, Prize.

**CROSSMAN (J.), Redruth.**

1871. Physical Society's 1st Year's Prize.  
1872. Physical Society's 2nd Year's Prize.  
1873. Physical Society's 3rd Year's Prize.

**CROWDY (F. D.), Bath.**

- w 1884-5. 4th Year Student, the Mead Medal.

**DAVIES (D.), Carmarthenshire.**

1843. Chemistry, 1st Prize;  
Midwifery, Hon. Cert.;  
Materia Medica, Prize.  
1844. Medicine, Hon. Cert.;  
Physiology and Anatomy, Hon. Cert.  
1845. Clinical Surgical Reports, Medal.

**DAVIES (D. S.), Bristol.**

- 1875-6. Physical Society's 1st Year's Prize.

**DAY (W. H.), Norwich.**

1844. Surgery, Prize;  
Physical Society's Essay, Hon. Cert.;  
Dresser's Clinical Surgery, Prize.

**DECK (J. F.), Nelson, New Zealand.**

1860. 1st Year Student, 1st Coll. Prize.  
1861. 2nd Year Student, 1st Coll. Prize;  
Physical Society's Prize.  
1862. 3rd Year Student, 1st Coll. Prize;  
Physical Society's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.

\* Member of Council Royal College of Surgeons. Surgeon to, and Special Lecturer on Clinical Surgery at, St. Thomas's Hospital; late Lecturer on Practical Surgery, and Assistant Demonstrator of Anatomy. Examiner in Surgery, University of Durham.

**DICKERSON (S. H.), Hartest, Suffolk.**

1853. Physiology, Hon. Cert.;  
Materia Medica, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.

**DIXON (E. L.), Preston, Lancashire.**

1852. 1st Year Student, Scholarship;  
Chemistry, Hon. Cert.  
1853. 2nd Year Student, Scholarship;  
Physiology, Hon. Cert.;  
Materia Medica, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Botany, Prize;  
Medicine, Hon. Cert.  
1854. 3rd Year Student, Scholarship;  
Descriptive Anatomy, Hon. Cert.;  
Practical Chemistry, Prize;  
Physiology, Hon. Cert.

**DOBSON (N. C.),† Holbeach, Lincoln-shire.**

1865. 1st Year Student, 1st Coll. Prize.  
1866. 2nd Year Student, 1st Coll. Prize.  
1867. 3rd Year Student, 2nd Coll. Prize;  
A Prize and Hon. Cert. for Pro-  
ficiency in Surgery and Surgical  
Anatomy at the Cheselden  
Medal Examination;  
Treasurer's Gold Medal.

**DRAKE (A. J.), Kingsclere, Hants.**

1870. 3rd Year Student, 1st Coll. Prize.

**DRAKE (C. H.), Kingsclere, Hants.**

1857. 1st Year Student, Hon. Cert.;  
1858. 2nd Year Student, Treasurer's  
1st Prize;  
Clinical Medicine, 2nd Prize.  
1859. 3rd Year Student, Hon. Cert.;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
General Proficiency, Treasurer's  
Medal.

**DRAKE (T.), Kingsclere, Hants.**

1858. 2nd Year Student, Treasurer's  
1st Prize;  
1859. 2nd Year Student, President's Prize.  
1860. 3rd Year, 1st College Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
General Proficiency, Treasurer's  
Medal.

**DREW (G. F. A.), Plymouth.**

1848. Descriptive and Surg. Anat. Prize;  
Chemistry, Hon. Cert.;  
Botany, Prize;  
Comparative Anatomy, Hon. Cert.  
Practical Chemistry, Prize;  
Gen. Proficiency, Hon. Cert.  
1849. Physiology, 2nd Prize;  
Midwifery, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.  
1850. Physiology, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.;  
Surgery, Hon. Cert.

**DUKES (C.),‡ Dalston.**

1865. 1st Year Student, Hon. Cert.  
1867. 3rd Year Student, Hon. Cert.;  
Prosecutor's Prize and Hon. Cert.

† Surgeon to the Bristol General Hospital and Lecturer on Surgery at the Bristol Medical School.

‡ Physician to Rugby School, and Senior Physician to Rugby Hospital.

- DICKES (T. A.), Croydon.**  
w 1888-9. 4th Year Student, Qualified for Mead Medal.
- DUNCAN (H.), London.**  
w 1882-3. 1st Year Student, 1st Entrance Science Scholarship, 1st Coll. Prize.  
w 1883-4. 2nd Year Student, Prosector's Prize.
- DUNCAN (W.),\* Manchester.**  
w 1876-7. 1st Year Student, The William Tite Scholarship.  
s 1877. 1st College Prize.  
w 1877-8. 2nd Year Student, The Musgrove Scholarship.  
2nd Year Physical Society's Prize.  
s 1878. 1st College Prize.  
w 1878-9. 2nd Tenure Musgrove Scholarship.  
1st College Prize;  
3rd Year Physical Society's Prize;  
Grainger Testimonial Prize.  
1880. 4th Year Student, The Cheselden Medal.  
The Treasurer's Medal.  
w 1881-2. The Solly Medal and Prize.
- DUNMAN (G.), Camberwell.**  
1852. Chemistry, Hon. Cert.  
1854. Midwifery, Hon. Cert.
- DYER (F. J.), Blackheath.**  
1847. Chemistry, Prize;  
Materia Medica, Hon. Cert.;  
1849. Physiology, Hon. Cert.;  
Midwifery, 2nd Prize;  
Medicine, Hon. Cert.
- ECCLES (C. H.), Brigg.**  
w 1884-5. 2nd Year Student, 1st Coll. Prize.  
s 1885. 2nd Year Student, 1st Coll. Prize.  
w 1885-6. 3rd Year Student, 1st Coll. Prize.  
s 1886. 3rd Year Student, 1st College Prize.
- EDDOWES (J. H.), Loughboro'.**  
1843. Physiology and Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Comparative Anatomy, Prize.  
1844. Physiology and Anatomy, Hon. Cert.;  
Clinical Medical Reports, Silver Medal.  
1845. Clinical Medicine, Prize.
- EDDOWES (W. D.), Loughboro'.**  
1845. Descriptive and Surgical Anatomy, Prize.
- EDMONDS (S.), St. Helen's, Lancashire.**  
1852. Chemistry, Hon. Cert.  
1853. Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.;  
Surgery, Hon. Cert.  
1854. Surgery and Surgical Anatomy, Hon. Cert.;  
Clinical Medicine, Treas. Prize;  
Clinical Medicine, Pres. Prize.  
1855. Surgical Reports, Pres. Prize;  
Clinical Medicine, Dr. Roots' Prize.
- EDWARDS (S.), Littlehampton.**  
1855. Midwifery, Hon. Cert.
- EDWARDS (V.), Woodbridge, Suffolk.**  
1843. Surgery, Prize.
- ELBOROUGH (P. J.), Herne Bay.**  
1845. Chemistry, Hon. Cert.  
1847. Medicine, Hon. Cert.;  
Midwifery, Prize.  
1848. Medicine, Hon. Cert.;  
Surgery, Hon. Cert.;  
Surgical Reports, Pres. Prize.
- ELLIS (J.), Portsea, Hants.**  
1857. Clinical Assistant (Medicine), Hon. Cert.
- ELWIN (C. J.), London.**  
1855. Practical Midwifery, Prize.
- EVANS (C. W. DE LACEY), Bangor.**  
w 1876-7. 3rd Year Student, The Solly Prize and Hon. Cert.
- FAIRBANK (J.), Islington.**  
1865. 1st Year Student, Hon. Cert.  
1866. 2nd Year Student, Prosec. Prize.
- FARRANT (S.), Collumpton, Devon.**  
1859. 2nd Year Student, Hon. Cert.  
1860. 3rd Year Student, Hon. Cert.
- FAULKNER (R.), Camberwell.**  
1844. Botany, Prize;  
Clinical Medical Reports, Hon. Cert.
- FAWSETT (F.), Surbiton.**  
w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship.  
s 1884. 1st Year Student, 1st Coll. Prize.  
w 1884-5. 2nd Year Student, The Musgrove Scholarship.  
w 1885-6. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 3rd College Prize.  
w 1886-7. 4th Year Student, The Cheselden Medal. Treasurer's Gold Medal.
- FELL (W.), Kensington.**  
w 1878-9. 2nd Year Student Prosector's Prize.
- FENTON (H. A. H.), Westminster.**  
w 1875-6. 1st Entrance Science Scholarship.  
s 1876. 1st Year Student, 1st College Prize.
- FERNIE (A.), Yeldon, Beds.**  
1853. Physiology, Hon. Cert.;  
Surgery, Hon. Cert.
- FERNIE (W. T.), Yeldon, Beds.**  
1852. Practical Midwifery, Prize;  
Midwifery, Hon. Cert.
- FISHER (T.), St. Michael's.**  
s 1872. 1st Year Student, Hon. Cert.  
s 1873. 2nd Year Student, 2nd College Prize.  
w 1874. 2nd Year Student, 3rd College Prize.  
w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize, and Cert. of Hon.
- FISHER (J. H.), Exeter.**  
w 1887-8. 1st Year Student, The William Tite Scholarship.  
s 1888. 1st Year Student, 1st Coll. Prize.  
w 1888-9. 2nd Year Student, The Musgrove Scholarship.  
w 1889-90. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 1st College Prize.
- FORD (G. W.), Cape of Good Hope.**  
w. 1880-81. 3rd Year Student, Prosector's Prize.

\* Obstetric Physician to, and Lecturer on Obstetric Medicine and Practical Midwifery at, Middlesex Hospital. Obstetric Physician Royal Hospital for Women and Children. Examiner in Midwifery, Examining Board in England.

**FOWLER (J. T.), Winterton, Lincoln.**

1854. Chemistry, Hon. Cert.

1855. Botany, Hon. Cert.

**FOWLER (J.), Winterton, Lincoln.**

1859. 1st Year Student, Hon. Cert.

1860. 2nd Year Student, 2nd College Prize.

1861. 3rd Year Student, 2nd College Prize.

**FREEMAN (D.), Kennington.**

1859. Clinical Medicine, Prize.

**FREEMAN (A. J.), Southsea, Hants.**

1865. 3rd Year Student, Hon. Cert.

**FULTON (J. A.), Stockwell.**

1852. Botany, Hon. Cert.

1853. Practical Chemistry, Prize.

**FURNIVAL (F. H.), Nottingham.**

w 1878-9. 1st Year Student;

The Wm. Tite Scholarship.

**GARDNER (E. B.), London.**

1858. Matriculation Examination—Classics and Mathematics, Prize.

**GARTON (W.), St. Helier's.**

1870. 2nd Year Student, 2nd College Prize.

Physical Society's 2nd Year's Prize.

1871. Physical Society's 3rd Year's Prize.

**GEORGE (C. F.), Kirton-on-Lindsay.**

1855. Midwifery, Hon. Cert.

1856. 2nd Year Student, Dr. Roots' Prize.

1857. 3rd Year Student, Hon. Cert.;

Surgery and Surgical Anatomy,  
Cheselden Medal.**GERVIS (F. H.), Tiverton.**

1861. 1st Year Matriculation Scholarship.

—College Prize, 2nd Coll. Prize.

1862. 2nd Year Student, 1st College Prize.

1863. 3rd Year Student, Hon. Cert. and  
Physical Society's Prize.**GERVIS (H.),\* Tiverton.**1856. 1st Year Student, Treas. 1st Prize;  
Matriculation Examination, Physics,  
&c., Prize.

1857. 2nd Year Student, Pres. Prize;

Physical Society's Essay, Prize.

1858. Clinical Assistant (Medicine), 2nd

Prize;

Physical Society's Essay, Prize;

General Proficiency, Treasurer's  
Medal.**GILES (F. W.), Henley-on-Thames.**

w 1875-6. 3rd Year Student, Hon. Cert.

**GIMBLETT (J.), Taunton.**

1860. 1st Year Student, Hon. Cert.

**GIMLETTE (G. H. D.), Southsea.**

s 1874. 1st Year Student, Hon. Cert.

w 1875-6. 3rd Year Student, Hon. Cert.

w 1876-7. Physical Society's 3rd Year's  
Prize.**GLOVER (J. P.), Lansdowne Road.**

w 1881-2. 3rd Year Student, 3rd Coll. Prize.

\* Consulting Obstetric Physician to St. Thomas's Hospital, and to the Royal Maternity Charity. Examiner in Obstetric Medicine at the University of Cambridge and the Royal College of Physicians. Late Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Thomas's Hospital.

**GODDARD (E.), London.**

1860. Matriculation Examination, Classics, &amp;c., Prize.

**GODDARD (L.), London.**

1856. Matriculation Examination, Classics and Mathematics, Prize.

**GODFREY (A. E.), Northampton.**

s 1883. 2nd Year Student, 2nd Coll. Prize.

w 1883-4. 3rd Year Student, 2nd Coll. Prize.

**GOODDY (E. S.), Hampstead.**

w 1882-3. 2nd Year Student, 2nd Coll. Prize.

s 1883. 2nd Year Student, 1st Coll. Prize.

**GOWLAND (W.), London.**

1845. Botany, Hon. Cert.

**GRABHAM (C.), Islington.**

1857. Matriculation Examination, Modern Languages, Prize.

**GRABHAM (G. W.),† Islington.**

1855. Matriculation Examination, Scholarship;

Midwifery, Hon. Cert.;

Materia Medica, Hon. Cert.

**GRABHAM (J.), Rochford, Essex.**1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;

Chemistry, Hon. Cert.;

Botany, Hon. Cert.;

Comparative Anatomy, Prize.

1850. Physiology, Hon. Cert.

1851. Physiology, Hon. Cert.;

Descriptive Anatomy, Hon. Cert.;

Forensic Medicine, Prize;

Surgery, Prize;

Midwifery, Hon. Cert.

**GRABHAM (M. C.), Islington.**

1860. 2nd Year Student, Hon. Cert.

1861. 3rd Year Student, Hon. Cert.

**GREAVES (C. A.), Derby.**1861. 1st Year Student, Treasurer's Prize;  
Matriculation Examination, Hon.  
Cert.

1862. 2nd Year Student, 2nd College Prize;

Physical Society's Prize.

1863. 3rd Year Student, 1st College Prize;

Physical Society's Prize;

Cheselden Medal.

**GREEN (C. D.), New Cross.**w 1879-80. 1st Year Student, The Wm. Tite  
Scholarship.

s 1880. 3rd College Prize.

w 1880-81. 1st College Prize.

s 1882. 1st Coll. Prize.

w 1882-3. 4th Year Student, qualified for  
Treasurer's Gold Medal.**GREEN (J. T.), Peckham, Surrey.**1865. 1st Year Student, Physical Society's  
Prize.**GREEN (M. H.), Peckham.**

s 1873. 1st Year Student, 2nd College Prize.

**GROSE (S.), Boston, Lincoln.**

1858. 2nd Year Student, Hon. Cert.

1859. Physical Society's Essay Prize.

† Government Inspector of Lunatic Asylums and Hospitals, New Zealand. Late Resident Medical Superintendent at Earlswood Asylum.

**GRIFFITHS (A. L.), London.**

1859. Midwifery, Hon. Cert.

**GULLIVER (G.),\* Canterbury.**

w 1876-7. Physical Society's 2nd Year's Prize.

**GURNEY (R. A. F.), Rampton, Cambridge.**

1851. Practical Midwifery, Prize.

**HAGUE (S.),† Camberwell.**

1863. 1st Year Student, 2nd Coll. Prize.

**HAIG-BROWN (C. W.), Godalming.**

s 1878. 1st Year Student, 2nd College Prize;  
w 1878-9. 2nd Year Student, 2nd College  
w 1880-81. The Cheselden Medal. [Prize.

**HAINWORTH (E. M.), Blackheath.**

w 1888-9. 1st Year Student, 1st Entrance  
Science Scholarship.

s 1889. 1st Year Student, 2nd College Prize.

**HAMMERTON (E.), Elland, York.**

1857. 1st Year Student, Hon. Cert.

**HAMMOND (J. H.), Bridlington, York.**

1850. Medical Cases, President's Prize.

**HARDING (J. A.), Bath.**

1859. Clinical Medicine, 2nd Prize.

1860. Clinical Assistant (Medicine), 1st  
Prize.

**HARPER (R.), Brighton.**

1844. Clinical Surgical Reports, Hon. Cert.

1845. Physical Society's Essay, Prize;  
Dresser's Clinical Surgery, Prize.

**HARRIS (J. E.), Lavender Hill.**

w 1887-8. 1st Year Student, 1st Entrance  
Science Scholarship.

**HASLAM (W. F.),‡ Reading.**

s 1876. 2nd Year Student, 1st College Prize.  
w 1877-8. The Cheselden Medal.

**HATCHETT (F. W.), S. Wales.**

s 1880. 1st Year Student, 1st College Prize.

**HATTON (G. S.), Newent, Gloucestershire.**

w 1876-7. 2nd Year Student, Prosecutor's  
[Prize.

**HAWKINS (H. P.),§ Hawkhurst.**

w 1882-3. 1st Year Student, The William  
Tite Scholarship.

w 1883-4. 2nd Year Student. The Peacock  
Scholarship.

w 1884-5. 3rd Year Student, 2nd tenure of  
Peacock Scholarship and 1st  
Coll. Prize.

w 1885-6. 4th Year Student, qualified for  
Mead Medal.

**HAYDON (T. H.), Richmond, Surrey.**

w 1889-90. 4th Year Student, qualified for  
Cheselden Medal.

\* Physician to London Fever Hospital.  
Assistant Physician to, and Lecturer on  
Comparative Anatomy at, St. Thomas's  
Hospital.

† Late Medical Registrar at St. Thomas's  
Hospital.

‡ Assistant Surgeon to the Birmingham  
General Hospital; late Demonstrator of  
Anatomy at St. Thomas's Hospital.

§ Resident Assistant Physician to St.  
Thomas's Hospital; Radcliffe Travelling  
Fellow, Oxford, 1886.

**HEELIS (R.), Carshalton.**

s 1877. 1st Year Student, 2nd College Prize.

s 1878. 2nd Year Student, 2nd Coll. Prize.

**HEFFERNAN (H. H.), Southsea.**

w 1883-4. 1st Year Student, 2nd Coll. Prize.

w 1886-7. 4th Year Student, qualified for  
Cheselden Medal.

**HEIGHTON (T.), Leicester.**

w 1873. 3rd Year Student, Hon. Cert.

**HEWLETT (T. J.), Harrow.**

1850. Matriculation Scholarship, Prize.

**HEYGATE (W. N.), Harslope, Bucks.**

1863. 2nd Year Student, Hon. Cert.

1864. 3rd Year Student, Hon. Cert.

**HEYWOOD (C. C.), Swinton, Manchester.**

s 1888. 3rd Year Student, 2nd Coll. Prize.

**HICKS (J. W.),|| Highgate New Town, N.**

1859. 1st Year Student, Treas.'s 1st Prize.

1860. 2nd Year Student, 1st College Prize;  
Physical Society's Prize.

1861. 3rd Year Student, 1st College Prize;  
Physical Society's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.

**HIGGINS (A. H.), Bermondsey.**

1857. Midwifery, Hon. Cert.

**HILDITCH (J.), Sandbach, Cheshire.**

1857. 1st Year Student, Hon. Cert.

1858. Physical Society's Essay, Prize.

1859. Essay on Neuralgia, Mr. N. Smith's  
Prize.

**HOBHOUSE (E.), Batcombe.**

w 1885-6. 3rd Year Student, 2nd Coll. Prize.

w 1886-7. 4th Year Student, qualified for  
the Mead Medal.

**HODGES (H. B.).**

1855. Midwifery, Hon. Cert.

**HODGES (R.), London.**

1843. Physiology and Anatomy, Hon.  
Cert.;

Medicine, Hon. Cert.;

Clinical Medicine, Hon. Cert.;

Surgical Essay, Silver Medal.

**HO KAI, Hong Kong, China.**

w 1875-6. 1st Year Student, Hon. Cert.

s 1876. Hon. Cert.

w 1876-7. 2nd Year Student, Hon. Cert.

**HOLBERTON (H. N.), Hampton.**

w 1876-7. 2nd Entrance Science Scholarship,  
and 2nd College Prize.

w 1877-8. 2nd Year Student, 1st Coll.  
Prize.

**HOOPER (J. H.), Upton Warren.**

1858. 1st Year Student, Hon. Cert.

1859. 2nd Year Student, College Prize.

1860. 3rd Year Student, Hon. Cert.

**HORTON (A. W.), Stockwell.**

1851. Descriptive Anatomy, Hon. Cert.

**HOUSE (F. M.), Chilbolton, Hants.**

w 1886-7. 4th Year Student, qualified for  
the Mead Medal.

**HOWELL (T.), London.**

1850. Practical Midwifery, Prize.

|| Late Lecturer on Botany at St. Thomas's  
Hospital; late Curator of the Museum.



**HUBBARD (J. W.), Leicester.**

1847. Clinical Medical Reports, Prize;  
Medicine, Prize;  
Physiology and Anatomy, Hon.  
Cert.  
Physical Society's Essay, Treas-  
urer's Prize.

**HULBERT (H. H.), Highworth.**

- w 1837-8. 4th Year Student, qualified for  
Cheselden Medal.

**HULL (W. W.), Acton.**

- w 1878-9. 2nd Entrance Science Scholar-  
ship.  
w 1881-2. The Mead Medal.

**HUNT (J. A.), Derby.**

- w 1873. 1st Year Student, Hon. Cert.  
w 1874. Prosector's Prize.

**HUNTER (W. F.), Margate.**

1859. 1st Year Student, Hon. Cert.;  
Matriculation Examination in  
Classics and Mathematics, Prize;  
Matriculation Examination in  
Modern Languages, Prize.  
1860. 2nd Year Student, 3rd Coll. Prize.  
1861. 3rd Year Student, Hon. Cert.

**HURMAN (H. B.), Bridgewater.**

1853. Midwifery, Hon. Cert.

**HUTTON (J. S.), Sevenoaks.**

- w 1881-2. Entrance Science Scholarship.  
2nd Coll. Prize.  
s 1882. 1st Coll. Prize.  
s 1884. 3rd Year Student,  $\frac{1}{2}$  1st and 2nd  
Coll. Prizes.  
w 1884-5. 4th Year Student, qualified for  
the Mead and Treasurer's Medals.

**ILES (D.), Fairfield.**

1863. 2nd Year Student, Hon. Cert.  
1864. 3rd Year Student, Hon. Cert.

**INGLIS (W. W.),\* Brixton Hill.**

1864. 1st Year Student, 2nd Coll. Prize.  
1865. 2nd Year Student, 2nd Coll. Prize.  
1866. 3rd Year Student, 3rd Coll. Prize  
Cheselden Medal.

**IVES (R.).**

1855. Midwifery, Hon. Cert.

**JACKSON (T. C.), Rotherhithe.**

1844. Materia Medica, Hon. Cert.

**JACOB (E. H.), Winchester.**

- w 1875-6. Physical Society's 3rd Year's Prize.

**JACOBSON (T. E.), Sleaford, Lincoln.**

1852. Practical Midwifery, Prize.

**JAFFÉ (C. S.), Hyde Park.**

- w 1887-8. 1st Year Student,  $\frac{1}{2}$  2nd Coll.  
Prize.

**JAMES (C. H.), Oudh, India.**

- w 1887-8. Solly Medal and Prize.

**JARDINE (J. L.), Brixton.**

1848. Physiology and Anatomy, Hon. Cert.  
1850. Medical Reports, Dr. Roots' Prize.

**JAY (M.), Wallaroo, South Australia.**

- w 1877-8. 1st Year Student, 3rd Coll. Prize.  
w 1878-9. 2nd Year Student, 2nd College  
Prize;  
Prosector's Prize.

\* Late Medical Registrar at St. Thomas's  
Hospital.

**JEFFERSON (T. J.), Hull.**

1861. 2nd Year Student, Hon. Cert.  
1862. 3rd Year Student, Hon. Cert.

**JOHNSON (W. G.), Wandsworth.**

1853. Chemistry, Hon. Cert.  
1854. Midwifery, Hon. Cert.  
1855. Comparative Anatomy, Prize;  
Midwifery, Hon. Cert.

**JOHNSTON (G. D.).**

- w 1882-3. 4th Year, Cheselden Medal.

**JONES (S.),†Cricklewood, Middlesex.**

1851. Matriculation Scholarship, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.;  
1st Year Student, Scholarship.  
1852. 2nd Year Student, Scholarship;  
Physiology, Hon. Cert.;  
Descriptive Anatomy, Prize;  
Botany, Hon. Cert.  
1853. Physiology, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
3rd Year Student, Scholarship;  
Materia Medica, Hon. Cert.

**JONES (Sydney H.), George Street,  
Hanover Square.**

- w 1881-2. 1st Year Student, Entrance  
Science Scholarship. The Wm.  
Tite Scholarship.

- w 1882-3. 2nd Year Student,  $\frac{1}{2}$  Musgrove  
Scholarship and 1st Coll. Prize  
combined.

**Prosector's Prize.**

- w 1883-4. 3rd Year Student, 2nd tenure of  
 $\frac{1}{2}$  Musgrove Scholarship, with  
1st College Prize.

- s 1884. 3rd Year Student,  $\frac{1}{2}$  1st and 2nd  
Coll. Prizes.

- w 1884-5. 4th Year Student, The Cheselden  
Medal.

**Treasurer's Gold Medal.****JONES (A. O.), Islington.**

1862. 1st Year Student, Hon. Cert.

**JONES (A. W.), Godington, Oxon.**

- s 1888. 3rd Year Student, 1st Coll. Prize.  
w 1888-9. 4th Year Student, qualified for  
Mead Medal.

**JONES (J.), Ilfracombe.**

1863. Matriculation Examination—  
Modern Languages and Modern  
History, College Prize.

**JONES (W. Wansbrough),† Leek.**

- w 1877-8. 1st Year Student;  
1st Entrance Science Scholarship;  
£60.

**The William Tite Scholarship.**

- w 1877-8. 1st Year Physical Society's Prize;

- s 1878. 1st Year Student, 1st Coll. Prize;

- w 1878-9. 2nd Year Student, The College  
Scholarship;

- s 1879. 2nd Year Student, 2nd Coll. Prize;

- w 1879-80. 3rd Year Student, 2nd tenure of  
Coll. Scholarship, and 1st Coll. Prize.

- w 1880-81. The Mead Medal;

**Treasurer's Gold Medal.**

† Member of Council, Royal College of  
Surgeons; Surgeon to St. Thomas's Hos-  
pital; late Lecturer on Surgery, Anatomy  
and Ophthalmic Surgery.

† Radcliffe Travelling Fellow, Oxford,  
1880. Late Resident Medical Officer, Barnes  
Convalescent Hospital, Manchester.



**JOSEPH (S. W. J.), St. Leonards.**

1873. Physical Society's 2nd Year Prize.

**KEELE (J. T.), South Lambeth.**1853. Materia Medica, Hon. Cert.;  
Midwifery, Hon. Cert.**KELLOCK (T. H.), Totnes.**

w 1889-90. 4th Year Student; The Cheselden Medal.

**KERAKOOSSE (J.), East Indies.**

1854. Midwifery, Hon. Cert.

**KEYWORTH (J. W.),\* Aston, Berks.**1848. Chemistry, Hon. Cert.;  
Materia Medica, Prize;  
General Proficiency, Hon. Cert.1849. Physiology, Hon. Cert.;  
Midwifery, 3rd Prize;  
Medicine, Hon. Cert.;  
Physical Society's Essay, Prize.1850. Physiology, Hon. Cert.;  
(Accoucheur) Midwifery, Hon. Cert.;  
Ophthalmic Reports, a Governor's  
Prize;  
Essay on Neuralgia, Mr. Newman  
Smith's Prize.1851. Comparative Anatomy, Prize;  
Clinical Medicine, Prize;  
Surgical Reports, Prize;  
Midwifery, Prize;  
Medical Reports, Prize;  
Pathology, Prize;  
Physical Society's Essay, Prize.**KIDD (H. C.), Upper Norwood.**w 1881-2. 1st Year Student, 3rd Coll. Prize.  
w 1884-5. 4th Year Student, qualified for  
the Mead Medal.**KING (A.), Norwich.**w 1886-7. 1st Year Student, 1st Coll. Prize.  
s 1887. 1st Year Student, 1st Coll. Prize.  
s 1888. 2nd Year Student, 1st Coll. Prize.  
w 1848-9. 3rd Year Student, 3rd Coll. Prize.  
s 1889. 3rd Year Student, 1st Coll. Prize.  
w 1889-90. 4th Year Student; Treasurer's  
Gold Medal.**KNAGGS (R. H. E.), Trinidad, W. Indies.**

w 1875-6. Prosector's Prize.

**LAKE (W. W.), Ilford, Essex.**

1873. Physical Society's 1st Year's Prize.

**LAKE (R.), Dover.**w 1881-2. 2nd Year Student, Prosector's  
Prize.w 1883-4. 4th Year Student, qualified for  
Cheselden Medal.**LAMBERT (T. W.), Cottingham.**w 1888-9. 4th Year Student, qualified for  
Cheselden Medal.**LANGLEY (R. J.), Tilehurst, Reading.**w 1886-7. 4th Year Student, qualified for  
Cheselden Medal.**LANKESTER (A. C.), Leicester.**w 1885-6. 1st Year Student, 1st Coll. Prize.  
w 1886-7. 2nd Year Student, †. 1st and 2nd  
College Prizes.w 1888-9. 4th Year Student, The Cheselden  
Medal.**LANKESTER (H.), Poole, Dorset.**1850. 1st Year Student, Scholarship;  
Descriptive Anatomy, 1st Prize;  
Chemistry, Prize.1851. Physiology, Prize;  
Materia Medica, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Botany, Hon. Cert.;  
Medicine, Prize;  
Physical Society's Essay, Prize;  
Surgery, Hon. Cert.1852. 3rd Year Student, Scholarship;  
Physiology, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Medical Cases, President's Prize;  
Medicine, Prize;  
Surgery, Prize;  
Surgery and Surgical Anatomy  
Cheselden Medal;  
General Proficiency, Treasurer's  
Medal.

1853. Surgical Essay, President's Prize.

**LANKESTER (H. H.), Leicester.**w. 1880-81. Entrance Science Scholarship.  
1st Year Student, 2nd Coll.  
Prize.w 1881-2. 2nd Year Student, The College  
Scholarship Two Years.**LAVER (H.)**

1855. Midwifery, Hon. Cert.

**LAVER (A. H.), Rayleigh.**

1870. 1st Year Student, 3rd Coll. Prize.

1871. 2nd Year Student, 2nd Coll. Prize.

w 1872. 3rd Year Student, 2nd Coll. Prize,  
Cheselden Medal.**LAWSON (R.), St. Andrews, N.B.**w 1880-81. 1st Entrance Science Scholarship.  
1st Year Student, The Wm. Tite  
Scholarship.

s 1881. 2nd Coll. Prize.

w 1881-2. 2nd Year, 2nd Coll. Prize.

w 1882-3. 3rd Year, 2nd Coll. Prize.

w 1883-4. 4th Year Student, The Cheselden  
Medal;  
Treasurer's Gold Medal.**LAXTON (T. L.), Stamford.**

w 1876-7. 2nd Year Student, Prosector's Prize.

**LEDGER (M.), London.**

1845. Dresser's Clinical Surgery, Prize.

**LEES (J.),† Wolverhampton.**

1859. 1st Year Student, Hon. Cert.;

1861. 3rd Year Student, Hon. Cert.;  
Physical Society's Prize.**LEESON (T.), Snaith, York.**1847. Medicine, Hon. Cert.;  
Surgery, Prize;  
Physiology and Anatomy, Hon.  
Cert.;  
Descriptive and Surgical Anatomy,  
Hon. Cert.;  
Midwifery, Hon. Cert.  
1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;  
Physiology and Anatomy, Hon.  
Cert.;  
Medicine, Hon. Cert.;  
Midwifery, Prize.**LE GROS (J.), Jersey.**

1841. Medicine, Hon. Cert.;

Midwifery, 1st Prize.

1845. Clinical Medical Reports, Medal;  
Medicine, Hon. Cert.;

Dresser's Clinical Surgery, Prize.

\* Late Lecturer on Physiology at Sydenham College, Birmingham.

† Late Demonstrator of Morbid Anatomy at St. Thomas's Hospital.

**LEREW (F. W.),** Maida Vale.  
s 1876. 1st Year Student, Hon. Cert.

**LITTELJOHN (S. G.),** Falmouth,  
Jamaica.  
1865. 1st Year Student, Hon. Cert.

**LOCOCK (H. S.),** Blackheath.  
1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;  
Physiology and Anatomy, Hon.  
Cert.;  
Midwifery, Hon. Cert.  
1849. Physiology, Hon. Cert.

**LONGSTAFF (G. B.),** Wandsworth.  
w 1873-4. 1st Year Student, 2nd Coll. Prize.  
s 1874. 1st Coll. Prize;  
Physical Society's 1st Year's Prize;  
s 1875. 2nd Year Student, 2nd Coll. Prize.  
w 1875-6. 3rd Year Student, 1st Coll. Prize.  
w 1876-7. 4th Year Student, Mead Medal.

**LOVELL (C. P.),** Hyde Park.  
w 1886-7. 1st Year Student, 1st Entrance  
Science Scholarship.  
w 1887-8. 2nd Year Student, The Peacock  
Scholarship.  
w 1888-9. 3rd Year Student, Second Tenure  
of Peacock Scholarship.

**LUARD (H. B.),** Aveley, Essex.  
s 1886. 3rd Year Student, 2nd Coll. Prize.  
w 1886-7. 4th Year Student, qualified for  
the Mead Medal.

**LUSH (W. H.),** Devizes.  
w 1872. 2nd Year Student, Prosector's  
Prize.

**LUSH (J. S.),** West Lavington.  
s 1873. 1st Year Student, 3rd Coll. Prize.

**MACEVOY (H. J.),** Chantilly.  
w 1884-5. 3rd Year Student,  $\frac{1}{2}$  2nd and 3rd  
College Prizes.  
s 1885. 3rd Year Student,  $\frac{1}{2}$  1st and 2nd Coll.  
Prizes.  
w 1885-6. 4th Year Student, Bronze Mead  
Medal.

**MACKENZIE (H. W. G.),\*** Edinburgh.  
w 1882-3. 3rd Year Student, 3rd Coll. Prize.  
s 1883. 3rd Year Student, 1st Coll. Prize.  
w 1883-4. 4th Year Student, The Mead  
Medal.

**MACMURDO (H. H.),** New Broad  
Street.  
1847. Chemistry, Hon. Cert.  
1849. Midwifery, Hon. Cert.

**MANBY (W. G.),** Barking, Essex.  
1851. Descriptive Anatomy, Hon. Cert.

**MARCH (H. C.),** Newbury.  
1858. 1st Year Student, Treasurer's 2nd  
Prize.  
1859. 2nd Year Student, Hon. Cert.  
1860. 3rd Year Student, Hon. Cert.

**MARTIN (C. J.),** Dalston.  
w 1884-5. 1st Year Student, 2nd Entrance  
Scholarship.

**MASON (M. T.),** Newington.  
1845. Practical Midwifery, Hon. Cert.

\* Assistant Physician to the Royal Free  
Hospital and to the Hospital for Consump-  
tion, Brompton; Medical Registrar at, late  
Resident Assistant Physician to, St.  
Thomas's Hospital.

**MAYBURY (A. C.),** Frimley, Surrey.  
1865. 3rd Year Student, Hon. Cert.

**MAYBURY (W. A.),** Frimley, Surrey.  
1867. 1st Year Student, 3rd College Prize.

**MAYBURY (H. M.),** Frimley, Surrey.  
1869. 1st Year Student, 2nd Coll. Prize.  
1871. 3rd Year Student, 3rd Coll. Prize.

**MAYBURY (A. V.),** Frimley.  
1870. 1st Year Student, 2nd Coll. Prize.  
1871. 2nd Year Student, 1st Coll. Prize.  
w 1872. 3rd Year Student, 1st Coll. Prize;  
Treasurer's Gold Medal.

**MAYNARD (J. C. M.)**  
1855. Midwifery, Hon. Cert.

**MEADOWS (H.),** Leicester.  
1867. 1st Year Student, The William  
Tite Scholarship;  
Phys. Soc. 1st Year's Prize.  
1868. 2nd Year, Tite Scholarship;  
Phys. Soc. 2nd Year's Prize.

**MILLAR (W. H.),** Brixton Hill.  
w 1888-9. 3rd Year Student, 2nd Coll. Prize.  
s 1889. 3rd Year Student, 2nd Coll. Prize.

**MILLER (B.),** London.  
1845. Midwifery, Hon. Cert.;  
Practical Midwifery, Prize;  
Clinical Medicine, Prize.

**MILNE (C. W.),** Aberdeen.  
1865. 1st Year Student, Hon. Cert.

**MISKIN (L. J.),** Lambeth.  
w 1889-90. 1st Year Student, 2nd Coll. Prize.

**MITCHELL (J.),** Leicester.  
1866. 1st Year Student, 2nd Coll. Prize;  
Phys. Society's 1st Year's Prize.  
1867. 2nd Year Student, 2nd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.

**MONEY (F. J.),** Ottham, Kent.  
1849. Descriptive Anatomy, 2nd Prize;  
Chemistry, Prize;  
Materia Medica, 1st Prize;  
Matriculation Scholarship, Prize;  
1st Year Student Scholarship.  
1850. Physiology, Prize;  
Comparative Anatomy, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize;  
Surgery, Hon. Cert.

1851. Descriptive Anatomy, Hon. Cert.;  
Midwifery, Prize;  
Medicine, Prize;  
Physical Society's Essay, Prize;  
Surgery, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
General Proficiency, Treasurer's  
Gold Medal.

**MONTAGUE (A. J. H.),** Wandsworth  
Road.  
w 1884-5. 4th Year Student, qualified for  
the Mead Medal.

**MORETON (J. E.),** Marton, Cheshire.  
1850. 1st Year Student, Scholarship;  
Descriptive Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.  
1851. Materia Medica, Hon. Cert.;  
Botany, Hon. Cert.;  
1852. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Physical Society's Essay, Prize;  
Medicine, Prize;  
Surgery, Prize;  
2nd Year Student, Scholarship.

1853. 3rd Year Student, Scholarship;  
Physiology, Prize;  
Clinical Medicine, Pres. Prize;  
Clinical Medicine, Treas. Prize;  
Clinical Medicine, Mr. N. Smith's  
Prize;  
Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Ophthalmic Surgery, Prize;  
Medicine, Prize;  
Forensic Medicine, Hon. Cert.;  
Surgery, Hon. Cert.;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
Gen. Proficiency, Treas. Medal.
1854. Clinical Med., Dr. Roots' Prize;  
Pathology, Hon. Cert.
- MORETON (T.), Marton, Cheshire.**  
1857. 1st Year Student, Treasurer's 2nd  
Prize;  
Matriculation Examination, Clas-  
sics and Mathematics, Prize.
1858. Clinical Medicine, Prize.
1859. 3rd Year Student, Hon. Cert.;  
Clinical Medicine, Hon. Cert.
- MORGAN (S.), London.**  
1852. Descriptive Anatomy, Hon. Cert.  
1853. Midwifery, Hon. Cert.  
1854. Midwifery, Hon. Cert.;  
Forensic Medicine, 2nd Prize.
- MORRIS (C. K.), Spalding, Lincoln-  
shire.**  
w 1875. Prosector's Prize.
- MORTON (J.), Holbeach, Lincoln.**  
1861. 1st Year Student, Hon. Cert.  
1862. 2nd Year Student, Hon. Cert.  
1863. 3rd Year Student, Hon. Cert.
- MOXON (H. M.), Brigsham.**  
1871. Prosector's Prize.
- MUSSON (A. W.), Clitheroe.**  
w 1888-9. 4th Year Student, qualified for  
Mead Medal.
- MUSSON (W. E.), Birkholme, Lin-  
coln.**  
1850. Matriculation Scholarship, Prize;  
Descriptive Anatomy, Hon. Cert.  
1851. Physiology, Hon. Cert.;  
Comparative Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.
- NEWBY (C. H.),\* London.**  
1870. Prosector's Prize.
- NEWSHOLME (A.), Bradford.**  
w 1875-6. 1st Year Student, 1st Coll. Prize.  
w 1876-7. 2nd Year Student, 1st College  
Scholarship.  
s 1877. Ditto 1st Coll. Prize.  
w 1877-8. 3rd Year Student, The "College  
Scholarship," 1st Coll. Prize.
- NEWTN (A. H.), Kennington,  
Surrey.**  
1865. 1st Year Student, Hon. Cert.
- NICHOL (F. E.), Roupell Park.**  
w 184-5. 4th Year Student, qualified for  
the Cheselden Medal.
- NICHOL (R.), Camberwell.**  
1844. Chemistry, 1st Prize;  
Materia Medica, Prize.
1845. Physiology and Anatomy, Hon.  
Cert.;  
Botany, Prize;  
Comparative Anatomy, Prize.
- NICHOLSON (F. W.), Putney.**  
s 1877. 1st Year Student, 3rd Coll. Prize.  
w 1877-8. 2nd Year Student, Prosector's  
Prize.
- NICHOLSON (J. F.),† Brigg, Lincoln.**  
w 1873. 1st Year Student, 1st Coll. Prize.  
s 1873. 1st Year Student, 1st Coll. Prize.  
w 1874. 2nd Year Student, 1st Coll. Prize.  
s 1874. Ditto 1st Coll. Prize.  
w 1875. 3rd Year Student, 1st Coll. Prize;  
Cheselden Medal;  
Mead Medal;  
Treasurer's Gold Medal.
- NICHOLSON (T. G.), Norwich.**  
w 1889-90. 1st Year Student, 1st Entrance  
Science Scholarship.
- NIX (H. W.), Somersham.**  
w 1838-9. 4th Year Student, qualified for  
Cheselden Medal.
- O'CALLAGHAN (C.), Killarney.**  
1847. Chemistry, Hon. Cert.;  
Materia Medica, Prize.
1848. Medical Reports, President's Prize;  
Physiology and Anat., Hon. Cert.;  
Midwifery, Hon. Cert.;  
Practical Midwifery, Prize;  
Forensic Medicine, Prize;  
Physical Society's Essay, Prize.
1849. Physical Society's Essay, Treas-  
urer's Prize;  
Resident Accoucheur's Report,  
Prize.
- ORANGE (W.),‡ Torquay.**  
1854. Midwifery, Hon. Cert.  
1856. Midwifery, Hon. Cert.
- ORD (G. R.), Brixton.**  
1858. Midwifery, Hon. Cert.
- ORD (W. M.),§ Brixton.**  
1853. Matriculation Examination,  
Scholarship;  
1st Year Student, Scholarship;  
Descriptive Anatomy, Prize;  
Chemistry, Prize.
1854. 2nd Year Student, Scholarship;  
Medicine, Prize;  
Materia Medica, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Surgery, Hon. Cert.;  
Physiology, Prize.
1855. 3rd Year Student, Scholarship;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
Forensic Medicine, Prize;  
Pathology, Prize;  
Practical Chemistry, Prize;  
Medicine, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Physiology, Prize;  
General Proficiency, Treasurer's  
Medal.
1856. Registrar, Prize.

† Physician to the Hull General In-  
firmery.

‡ Late Resident Medical Superintendent  
at Broadmoor Asylum.

§ Physician to, and Joint Lecturer on  
Medicine at, St. Thomas's Hospital. Late  
Lecturer on Comparative Anatomy, Phy-  
siology, and Practical Physiology.

\* Late Surgical Registrar at St. Thomas's  
Hospital.

**ORD (W. W.),** Brook Street.

s 1884. 1st Year Student, 2nd Coll. Prize.  
w 1884-5. 2nd Year Student,  $\frac{1}{2}$  2nd College Prize.

w 1886-7. 4th Year Student, Mead Medal.

**OSBORN (S.),\* Brixton.**

1870. Physical Society's 2nd Year's Prize.

**OUGHTON (T.),** London.

1858. Clinical Medical Assistant, 1st Prize.

**OZANNE (C. H.),** Guernsey.

1844. Descriptive and Surgical Anatomy, Prize.

**OZANNE (J.),** Guernsey.

1843. Physiology and Anatomy, Cheselden Medal;

Comparative Anatomy, Hon. Cert.

1844. Medicine, Prize;

Midwifery, 2nd Prize;

Surgery, Hon. Cert.;

Physical Society's Essay, Prize;

Clinical Surgical Reports, Silver Medal.

**PAGE (W. H.),** Cheltenham.

s 1872. 1st Year Student, Hon. Cert.

w 1873. 3rd Coll. Prize.

**PALMER (M. H. C.),** Newbury, Berks.

1870. Physical Society's 2nd Year's Prize.

1872. Physical Society's 3rd Year's Prize.

**PARSONS (F. G.),** Lee, Kent.

w 1882-3. 2nd Year, Prosector's Prize.

w 1886-7. 6th Year, Grainger Testimonial Prize.

**PEARCE (G.),** Salisbury.

1860. 1st Year Student, 2nd Coll. Prize.

1861. 2nd Year Student, 2nd Coll. Prize.

**PEEK (F. H.),** Diss, Norfolk.

s 1872. 1st Year Student, 1st Coll. Prize.

w 1873. The William Tite Scholarship.

w 1874. 2nd Year Wm. Tite Scholarship.

**PENBERTHY (J.),** Redruth.

1854. 1st Year Student, Scholarship;

Descriptive Anatomy, Prize;

Chemistry, Hon. Cert.

1855. 2nd Year Student, Scholarship;

Midwifery, Hon. Cert.;

Botany, Prize;

Descriptive Anatomy, Hon. Cert.

**PERKINS (J. J.),** Brixton.

w 1888-9. 3rd Year Student 1st C. U. Prize.

w 1889-90. 4th Year Student, qualified for Mead Medal.

**PERN (A.),** Winchester, Hampshire.

1865. 1st Year Student, Hon. Cert.

**PHILLIPS (G. G.),** Newcastle Emlyn.

1859. 2nd Year Student, Hon. Cert.

1860. 3rd Year Student, 3rd Coll. Prize.

**PICKFORD (J. K.),** Brixton.

w 1872. 1st Year Student, 3rd Coll. Prize.

s 1872. Hon. Cert.

**PIETERSEN (J.),** Cape of Good Hope.

w 1883-4. Soily Medal and Prize.

**PIKE (W. R.),** Leicester.

1868. Physical Society's 1st Year's Prize.

**PIKE (J. B.),** Leicester.

w 1872. 2nd Year Student, Hon. Cert.

w 1873. 3rd Year Student, Hon. Cert.

**PLANCK (C.),** Edenbridge.

w 1888-9. 1st Year Student, 2nd Coll. Prize.

w 1889-90. 2nd Year Student, The Peacock Scholarship.

**PLOWMAN (R.),** Bridgewater, Somset.

1862. 1st Year Student, Hon. Cert.

1863. 2nd Year Student, Hon. Cert.

1865. 3rd Year Student, Hon. Cert.

**POLLARD (F.),** Taunton, Somerset.

1865. 1st Year Student, 2nd Coll. Prize.

1866. 2nd Year Student, 2nd Coll. Prize;

Physical Society's 2nd Year's Prize.

1868. 3rd Year Student, 1st Coll. Prize;

Physical Society's 3rd Year's Prize;

Cheselden Medal.

**POTTER (H. P.),†** Denmark Hill.

w 1872. 1st Year Student, Hon. Cert.

s 1872. 3rd College Prize.

w 1873. 2nd Year Student, 2nd Coll. Prize;

Prosector's Prize.

w 1874. 3rd Year Student, 1st Coll. Prize;

Cheselden Medal;

Hon. Cert. for Gen. Proficiency.

1875. Grainger Testimonial Prize.

**POYNTER (G. F.),** Clapham.

1872. Phys. Society's 1st Year's Prize.

1874. Phys. Society's 3rd Year's Prize.

**PURKISS (A.),** Kennington.

w 1875-6. 1st Year Student, Hon. Cert.

s 1876. Hon. Cert.

**PURVIS (J. P.),** Blackheath.

1861. 1st Year's Student, Hon. Cert.;

Matriculation Examination, Hon. Cert.

1862. 2nd Year Student, Hon. Cert.

1863. 3rd Year Student, Hon. Cert.

**RAINBOW (F.),** Lower Norwood.

1864. 1st Year Student, Hon. Cert.

1865. 2nd Year Student, 3rd Coll. Prize.

1866. 3rd Year Student, 2nd Coll. Prize.

**RAYNER (H.),‡** Hythe, Kent.

1862. Matriculation Examination—Physics and Natural History, Hon. Cert.;

1st Year Student, 1st Coll. Prize.

1863. 2nd Year Student, 1st Coll. Prize.

1864. 3rd Year Student, Hon. Cert.;

Hon. Cert. for the Cheselden Medal.

**RELTON (B.),** Ealing.

1880. 2nd Entrance Science Scholarship.

**RICHARDSON (C. S.),** Greenwich.

1851. Surgery, Hon. Cert.

1852. Midwifery, Prize.

**RICHARDSON (L.),** Greenwich.

1848. General Pathology, Prize.

**RICHARDSON (S. W. F.),** Whitby.

w 1889-90. 1st Year Student, The William Tite Scholarship.

† Late Surgical Registrar to St. Thomas's Hospital.

‡ Lecturer on Psychology at St. Thomas's Hospital. Late Lecturer on Psychology at Middlesex Hospital, and Medical Superintendent Hanwell Asylum.

\* Assistant Surgeon to the Hospital for Women, Soho Square. Late Surgical Registrar at St. Thomas's Hospital.

**RIDGE (J. J.), Horselydown.**

1864. 1st Year Student, The William Tite Scholarship.

1865. 2nd Year of Tite's Scholarship ; Physical Society's 2nd Year's Prize Prosecutor's Prize.

1866. The Grainger Testimonial Prize.

1868. 3rd Year Tite Scholarship ; Hon. Cert. for Proficiency in Surgery and Surgical Anatomy ; Treasurer's Gold Medal.

**ROBERTS (E. A.), Birmingham.**

w 1884-5. 1st Year Student,  $\frac{1}{2}$  1st and 2nd College Prizes.

s 1887. 3rd Year Student, 2nd Coll. Prize.

**ROBINSON (H. B.),\* Lower Norwood.**

s 1881. 2nd Year Student, 1st Coll. Prize.

**ROE (A. D.), Eccles.**

w. 1880-81. 3rd Year Student, 2nd Coll. Prize.

**ROGERS (R. S.), Greenwich.**

1843. Midwifery, First Prize ; Clinical Medicine, Hon. Cert.

**ROSSITER (G. F.), Taunton.**

1871. 1st Year Student, 1st Coll. Prize.

w 1872. 2nd Year Student, 2nd Coll. Prize.

s 1872. 1st Coll. Prize.

w 1873. 3rd Year Student, 3rd Coll. Prize ; Cheselden Medal ; Treasurer's Gold Medal.

**ROUSE (R. E.), Woodbridge.**

s 1880. 2nd Year Student, 3rd Collage Prize.

**RUDALL (J. T.), Crediton, Devon.**

1853. Physiology, Hon. Cert. ; Midwifery, Hon. Cert. ; Medicine, Hon. Cert. ; Surgery, Hon. Cert.

**RUSSELL (A. E.), Greenwich.**

w 1889-90. 1st Year Student, 2nd Entrance Science Scholarship ; 1st Coll. Prize.

**SANDFORD (H. C.), Brixton.**

w 1872. 1st Year Student, 1st Coll. Prize.

s 1872. 2nd College Prize.

w 1873. 2nd Year Student, 1st Coll. Prize.

s 1873. 3rd College Prize.

w 1874. 3rd Year Student, 2nd Coll. Prize ; Treasurer's Gold Medal.

**SANEYOSHI (Y.), Tokio, Japan.**

w 1881-2. 3rd Year Student, 1st Coll. Prize.

**SANKEY (G. G.), Ashford, Kent.**

1864. 3rd Year Student, 3rd Coll. Prize.

**SAUNDERS (G. M. C.), London.**

1843. Midwifery, Hon. Cert.

**SAUNDERS (H. W.), London.**

1867. 1st Year Student, 2nd Coll. Prize.

1868. Prosecutor's Prize.

1869. 3rd Year Student, 1st. Coll. Prize ; Treasurer's Gold Medal ; Physical Society's 3rd Year's Prize.

**SAUNDERS (W. S.), Camden Town.**

1844. Midwifery, Hon. Cert.

1845. Medicine, Prize ;

Midwifery, Prize ;

Clinical Medicine, Prize.

**SAVILL (T. D.), Brixton.**

w 1875-6. 2nd Entrance Science Scholarship ;

1st Year Student, The William Tite Scholarship.

s 1876. 3rd College Prize.

w 1876-7. 2nd Year Student, Hon. Cert.

s 1877. 2nd Year Student, 2nd Coll. Prize.

**SCOTT (R. J.), Omagh, Tyrone.**

1861. 1st Year Student, Hon. Cert.

**SCUTT (T.), Bere Regis.**

w 1882-3. 3rd Year Student, 1st Coll. Prize

**SEDGWICK (J.), Boroughbridge.**

1854. Descriptive Anatomy, Hon. Cert.

1855. Surgery, Hon. Cert. ;

Midwifery, Hon. Cert.

**SEDGWICK (L. W.), Boroughbridge.**

1848. Descriptive and Surgical Anatomy, Prize ;

Physiology and Anatomy, Prize ;

Medicine, Hon. Cert. ;

Midwifery, Prize ;

Surgery, Prize ;

1849. Physiology, 1st Prize ;

Midwifery, 1st Prize ;

Surgery, Prize ;

Medicine, 1st Prize ;

General Proficiency, Treasurer's Medal.

**SERGEANT (E ), Preston.**

1870. 3rd Year Student, 3rd Coll. Prize ; Cheselden Medal.

**SEWELL (E.), Little Oakley.**

1848. Physiology and Anatomy, Hon. Cert.

**SHARKEY (S. J.),† Galway.**

1874. Physical Society's 2nd Year's Prize.

**SHAW (J.), Clapham Road.**

w 1874-5. 1st Year Student, 1st Coll. Prize.

s 1875. 1st Coll. Prize.

w 1875-6. 2nd Year Student, 1st Coll. Prize.

**SHEA (H. G.), London.**

1860. 1st Year Student, Hon. Cert.

1861. 2nd Year Student, Hon. Cert.

1862. 3rd Year Student, 2nd Coll. Prize.

**SHEA (J.), London.**

1855. Midwifery, Hon. Cert.

1859. Midwifery, Hon. Cert.

**SHEARER (D. F.), Bradford, Yorks.**

s 1888. 2nd Year Student,  $\frac{1}{2}$  2nd Coll. Prize.

w 1889-90. 4th Year Student, qualified for Cheselden Medal.†

**SHEPPARD (C. E.),‡ Kensington.**

w 1873-4. 1st Year Student, 1st Coll. Prize.

s 1874. 1st Year Student, 2nd Coll. Prize.

w 1874-5. 2nd Year Student, 1st Coll. Prize.

s 1875. 1st Coll. Prize.

w 1875-6. 3rd Year Student, 2nd Coll. Prize ;

Physical Society's 2nd Year's Prize.

w 1876 7. 4th Year Student, the Treasurer's Gold Medal.

w 1877-8. Solly Medal and Prize, £20. Paper published in Hosp. Reports, Vol. VIII.

† Assist.-Physician to, and Joint Lecturer on Pathological Anatomy and Demonstrator of Morbid Anatomy at, St. Thomas's Hospital.

‡ Late Resident Assistant-Physician and Medical Registrar to St. Thomas's Hospital.

\* Resident Assistant Surgeon to St. Thomas's Hospital.



**SHEPPARD (W. J.), Kensington.**  
w 1880-81. 3rd Year Student, 3rd Coll. Prize.

w 1881-2. The Treasurer's Gold Medal.

**SHERINGTON (C. S.),\* Caius Coll., Cambs.**

w 1882-3. 6th Year, Grainger Testimonial Prize.

**SHIRTLIFF (E. D.), Kingston-on-Thames.**

w 1882-3. 2nd Entrance Science Scholarship.

**SIDDALL (J. B.),† Morton, Derby.**

1862. 1st Year Student, Hon. Cert.

1863. 2nd Year Student, Hon. Cert.

1864. 3rd Year Student, Hon. Cert.;

Hon. Cert. for the Cheselden Medal.

**SIMMONS (H. B. M.), West Indies.**

1849. Descriptive Anatomy, Hon. Cert.

**SIMON (M. F.), Blackheath.**

1866. 1st Year Student, 1st Coll. Prize.

1869. 3rd Year Student, 3rd Coll. Prize;

Prosector's Prize;

Prize and Hon. Cert. for Surgery and Surgical Anatomy.

**SIMPSON (H.), Market Weighton.**

w 1889-90. 3rd Year Student, 3rd Coll. Prize

**SIMS (G. S.), Derby.**

s 1881. 1st Year Student, 3rd Coll. Prize.

**SISSONS (W. H.), Hull.**

1858. Matriculation Examination—  
Physics, &c., Prize.

1859. 2nd Year Student, Hon. Cert.;

Clinical Medicine, Prize;

Physical Society's Essay, Prize.

1860. 3rd Year Student, 2nd Coll. Prize.

Physical Society's Prize.

**SKINNER (W.), Stockton-on-Tees.**

1848. Botany, Hon. Cert.;

Materia Medica, Hon. Cert.

**SKIPPER (J.), Dalston, London.**

1852. Midwifery, Hon. Cert.

**SKIPTON (S. S.), East Indies.**

1851. Midwifery, Hon. Cert.

**SLATER (J. S.), Bath.**

1868. 1st Year Student, 1st Coll. Prize.

1869. Physical Society's 2nd Year's Prize.

1870. 3rd Year Student, 2nd Coll. Prize;

Treasurer's Gold Medal.

**SLAUGHTER (C. H.), Farningham.**

1855. Midwifery, Hon. Cert.

**SLAUGHTER (G. M.), Farningham.**

1854. Midwifery, Hon. Cert.

**SMITH (E.), Wandsworth Common.**

w 1888-9. 1st Year Student, 2nd Entrance Science Scholarship.

The William Tite Scholarship.

s 1889. 1st Year Student, 1st Coll. Prize.

w 1889-90. 2nd Year Student, 1st Coll. Prize

\* Lecturer on Physiology at St. Thomas's Hospital. Fellow of Gonville and Caius College, Cambridge. Physiological Society Hon. Sec. Examiner for the Natural Science Tripos, Parts II. and I., and in Physiology for the M.B. Degree, Univ. Camb. Examiner in Physiology for the Conjoint Board in England.

† Late Physician to H.B.M. Legation, Japan.

**SMITH (H. U.), Reading.**

w 1876-7. 4th Year Student, Cheselden Medal.

**SMITH (R. P.),‡ Belvedere.**

s 1876. 2nd Year Student, 2nd College Prize.

**SMYTH (H. J.), Brondesbury.**

w 1882-3. 1st Year Student, 3rd Coll. Prize.

s 1883. 1st Year Student, 1st Coll. Prize.

w 1883-4. 2nd Year Student, 1st Coll. Prize.

s 1884. 2nd Year Student, 2nd Coll. Prize.

w 1885-6. 4th Year Student, Treasurer's Gold Medal.

**SNAITH (F.), Boston, Lincolnshire.**

1864. 3rd Year Student, Hon. Cert.

**SOLLY (E.)§ Congleton.**

w 1883-4. 2nd Year Student, 2nd Coll. Prize

w 1885-6. Solly Medal and Prize.

**SOLLY (R. V.), Congleton.**

w 1884-5. 2nd Year Student, ‡ 2nd College Prize.

w 1886-7. 4th Year Student, qualified for Cheselden Medal.

**SPRAKELING (R. J.), Canterbury.**

1855. Midwifery, Hon. Cert.

1856. 2nd Year Student, Hon. Cert.;

Clinical Medicine, Prize.

**STABB (A. F.), Ilfracombe.**

w 1885-6. 1st Year Student, 1st Entrance Science Scholarship;

The William Tite Scholarship.

s 1886. 1st Year Student, 2nd College Prize.

w 1886-7. 2nd Year Student, The Musgrove Scholarship

s 1887. 2nd Year Student, 1st Coll. Prize.

w 1887-8. 3rd. Year Student, 2nd Tenure of Musgrove Scholarship, with 1st Coll. Prize.

w 1888-9. 4th Year Student, qualified for Cheselden Medal.

Treasurer's Gold Medal.

**STABB (E. C.), Ilfracombe.**

w 1883-4. 2nd Year Student, Prosector's Prize.

s 1884. 2nd Year Student, 1st Coll. Prize.

w 1885-6. 4th Year Student, qualified for Cheselden Medal.

**STABB (W. W.), Torquay.**

w 1889-90. 4th Year Student. The Mead Medal.

**STADDON (J. H.), London.**

1858. Clinical Medicine, Prize.

1859. Clinical Medicine, Prize.

**STEPHENS (J. N.), Walton-on-Thames.**

w 1876-7. Physical Society's 1st Year's Prize.

**STEPHENS (S. Sanders), Taunton.**

1863. Physical Society's 2nd Year's Prize.

**STODDART (F. W.), Bristol.**

w 1877-8. 1st Year Student, 1st Coll. Prize.

**STOKES (W. G. G.), Cambridge.**

w 1887-8. 3rd Year Student, 3rd Coll. Prize.

‡ Resident Physician and Medical Superintendent, Bethlem Royal Hospital for Lunatics. Late Resident Assistant-Physician to St. Thomas's Hospital.

§ Surgical Registrar at St. Thomas's Hospital.



**STONE (W. H.),\* London.**

1854. Matriculation Examination—  
Scholarship;  
1st Year Student, Scholarship;  
Descriptive Anatomy, Hon. Cert.;
1854. Botany, Prize;  
Chemistry, Prize.
1855. 2nd Year Student, Scholarship;  
Forensic Medicine, Prize;  
Physical Society's Essay, Prize;  
Practical Chemistry, Prize;  
Medicine, Prize;  
Descriptive Anatomy, Hon. Cert.;
1856. Clinical Medical Prize; [Medal.  
General Proficiency, Treasurer's

**SUMMERHAYES (H.), Crewkerne, Somersetshire.**

1861. Matriculation Examination—  
Classics and Mathematics,  
President's Prize; [Prize;  
Modern Languages, &c., College  
Physics and Natural History,  
College Prize;  
The William Tite Scholarship.
1862. 2nd Year Tite's Scholarship.
1863. 3rd Year Tite's Scholarship;  
Treasurer's Gold Medal.

**SUMMERHAYES (W.), Crewkerne, Somersetshire.**

1856. Matriculation Examination—Classics and Mathematics, Hon. Cert.;
- Matriculation Examination—  
Modern Languages, Prize.

**SUTCLIFF (E.), Camberwell.**

1861. 1st Year, 3rd College Prize;  
Matriculation Examination—Hon. Cert.
1863. 3rd Year Student, 3rd Coll. Prize.

**SUTCLIFFE (J.), Ashton-under-Lyne.**

1869. Prosector's Prize.

**SUTCLIFFE (W. G.), Clapham.**

- w 1888-9. 1st Year Student, 1st Coll. Prize.
- s 1889. 1st Year Student, 2nd Coll. Prize.
- w 1889-90. 2nd Year Student, 2nd Coll. Prize.

**SWALLOW (J. D.), Reading.**

1861. 2nd Year Student, Hon. Cert.

**SWEETING (R. B.), Reading.**

1853. 1st Year Student, Scholarship;  
Descriptive Anatomy, Hon. Cert.;
1854. 2nd Year Student, Scholarship;  
Midwifery, Prize.
1855. 3rd Year Student, Scholarship;  
Midwifery, Hon. Cert.;
1855. Clinical Medicine, Treasurer's

**SWEETING (T.), Reading.**

1855. Midwifery, Hon. Cert.

**TAKAKI (Kanehiro),† Kasumigaseki, Tokio, Japan.**

- w 1875-6. 1st Year Student, 3rd Coll. Prize.

\* Examiner in Medicine, Royal College of Physicians. Lecturer on Physics and Natural Philosophy, late Physician to, and Lecturer on Materia Medica at St. Thomas's Hospital; Late Assistant-Physician to the Hospital for Consumption, Brompton.

† Director-General of the Medical Department Imperial Japanese Navy. Surgeon to the Tokio General Hospital.

**s 1876. 2nd College Prize.**

- w 1876-7. 2nd Year Student, 1st Coll. Prize.
- s 1877. 2nd Year Student, 3rd Coll. Prize.
- w 1877-8. 3rd Year Student, 2nd Coll. Prize.
- w 1878-9. 4th Year Student;  
The Cheselden Medal;  
The Treasurer's Gold Medal.

**TALBOT (G. T.), Kidderminster.**

1848. Medical Reports, Dr. Roots' Prize.

**TAYLOR (C. M.), Wrawby, Brigg.**

1871. 1st Year Student, 2nd Coll. Prize.
- w 1872. 2nd Year Student, 1st Coll. Prize.
- w 1873. 3rd Year Student, 1st Coll. Prize;  
Surgery and Surgical Anatomy,  
Hon. Cert.

**TAYLOR (S.),‡ Burton-on-Trent.**

- w 1872. 3rd Year Student, Hon. Cert.

**TAYLOR (S. J.), Grantham.**

- s 1875. 1st Year Student, Hon. Cert.
- w 1875-6. 2nd Year Student, The Musgrove Scholarship.
- w 1876-7. 3rd Year Student, 2nd Year Musgrove Scholarship, and 1st College Prize.
- w 1877-8. The Mead Medal;  
The Treasurer's Gold Medal.

**TEANBY (F. W.), Turnham Green.**

1851. Practical Midwifery, Prize.
1852. Clinical Medicine, Junior Prize;  
Midwifery, Hon. Cert.

**THOMAS (L. M.), Camberwell.**

1866. 1st Year Student, 3rd Coll. Prize.
1867. 2nd Year Student, 3rd Coll. Prize.
1869. 3rd Year Student, 2nd Coll. Prize;  
Cheselden Medal.

**THOMAS (P. C.), Chelsea.**

- w 1837-8. 4th Year Student, qualified for the Mead Medal.

**THOMAS (W. L.), Neath, Glamorgan.**

1845. Chemistry, Prize;  
Materia Medica, Prize.
1847. Medicine, Hon. Cert.;
- Physiology and Anatomy, Prize.
- Physical Society's Essay, Prize.

**THOMPSON (F. H.), Tenbury.**

1870. Prosector's Prize.

**THUDICHUM (G. D.), Kensington.**

- w 1878-9. Physical Society's 2nd Year's Prize.

**TIMOTHY (P. V.), London.**

1851. Practical Midwifery, Prize;  
Midwifery, Hon. Cert.

**TODD (A. J. M.), Gravesend.**

- w 1863. 1st Year Student, 2nd Coll. Prize.
- w 1864. Prosector's Prize.

**TOLLER (S. G.), Notting Hill.**

- w 1885-6. 1st Year Student, 2nd Entrance Science Scholarship.
- s 1886. 1st Year Student, 1st College Prize.
- w 1886-7. 2nd Year Student, ‡ 1st and 2nd College Prizes.
- w 1887-8. 3rd Year Student, 2nd Coll. Prize.
- w 1888-9. 4th Year Student, The Mead Medal.

‡ Assistant Physician West London Hospital, Demonstrator of Anatomy, St. Thomas's Hospital. Late Physician North London Hospital for Consumption.

**TOMSON (K.), Luton, Beds.**

1842. Mat-ria Medica, Prize.

1843. Medicine, Prize;

Clinical Medicine, Hon. Cert.

**TOMSON (W. B.), Luton, Beds.**

w 1879-80. 1st Year Student, 2nd Coll. Prize.

s 1880. 1st Year Student, 2nd Coll. Prize.

w 1880-81. 2nd Year Student, The Musgrove

Scholarship, Prosecutor's Prize.

w 1881-2, 3rd Year Student, 2nd Coll. Prize;

2nd Tenure of Musgrove  
Scholarship.

s 1882. 2nd Coll. Prize.

w 1882-3. Tre surer's Gold Medal.

**TONKING (J. H.), Camborne.**w 1884-5. 3rd Year Student,  $\frac{1}{2}$  2nd and 3rd  
College Prizesw 1885-6. 4th Year Student, The Cheseld-n  
Medal.**TOTSUKA (K.),\* Tokio, Japan.**

s 1882. 1st Year Student, 2nd Coll. Prize.

w 1882-3. 2nd Year Student,  $\frac{1}{2}$  Musgrove  
Scholarship and 1st Coll. Prize  
combined.w 1883-4. 3rd Year Student, 2nd tenure of  
 $\frac{1}{2}$  Musgrove Scholarship, with  
3rd College Prize.**TREND (H. G.), Bridgewater.**

1853. Practical Midwifery, Prize;

Midwifery, Hon. Cert.

1854. Midwifery, Hon. Cert.;

Clinical Medicine, Treasurer's Prize.

**TREVES (W. K.), Dorchester.**1863. Matriculation Examination—  
Physics and Natural History,  
Hon. Cert.; andModern Languages and Modern His-  
tory, College Prize and Hon. Cert.;

1st Year Student, Hon. Cert.

1865. 3rd Year Student, 2nd Coll. Prize;

Prosecutor's Prize.

**TURNER (H. G.), Camberwell Grove.**

w 1885-6. 2nd Year Student, 2nd Coll. Prize.

s 1886. 2nd Year Student, 2nd College Prize.

w 1886-7. 3rd Year Student, 3rd Coll. Prize.

s 1887. 3rd Year Student, 1st Coll. Prize.

w 1887-8. The Mead Medal.

**TYRRELL (W.), Richmond.**

1851. Descriptive Anatomy, Hon. Cert.

1852. Medicine, Hon. Cert.;

Surgery, Hon. Cert.

1853. Forensic Medicine, Hon. Cert.;

Ophthalmic Essay, Mr. Dixon's Prize

1854. Surgical Reports, President's Prize

**UMNEY (W. F.), Sydenham.**

w 1887-8. 2nd Year Student, 1st Coll. Prize

**VARDY (J. L.), London.**

1854. Midwifery, Hon. Cert.

1855. Practical Midwifery, Prize.

**VERDON (H. W.), Eccles.**

1872. 2nd Year Student, Hon. Cert.

**WAGSTAFFE (W. W.),† Kennington.**1862. Matriculation Examination—Clas-  
sics and Mathematics, President's  
Prize.

Physics and Natural History

College Prize;

Modern Languages, &amp;c., College

Prize;

1st Year Student, Treasurer's  
Prize;

1863. 2nd Year Student, 1st Coll. Prize.

1864. 3rd Year Student, 1st Coll. Prize;

Physical Society's 3rd Year's Prize

Cheselden Medal;

Treasurer's Gold Medal.

**WALKER (R.), Kendal.**

1854. Descriptive Anatomy, Hon. Cert.;

Midwifery, H. n. Cert.

1855. Midwifery, Hon. Cert.

**WALLACE (C. S.), Haslemere.**w 1887-8. 1st Year Student,  $\frac{1}{2}$  2nd Coll. Prize

s 1888. 1st Year Student, 2nd Coll. Prize

w 1888-9. 2nd Year Student, 1st Coll. Prize.

w 1889-90. 3rd Year Student, 2nd Coll. Prize.

**WALLER (A.), Islington.**

1864. 1st Year Student, 1st Coll. Prize.

1865. 2nd Year Student, 2nd Coll. Prize;

1866. 3rd Year Student, 1st Coll. Prize;

Physical Society's 3rd Year's Prize

Treasurer's Gold Medal.

**WALLER (C. B.), London.**

1860. 2nd Year Student, Hon. Cert.

**WARD (F. H.),† Scarborough.**

1863. 1st Year Student, Treas. Prize.

1864. 2nd Year Student, 1st Coll. Prize;

Physical Soc. 2nd Year's Prize.

1865. 3rd Year Student, 1st Coll. Prize;

Physical Soc. 3rd Year's Prize;

Cheselden Medal;

Treasurer's Gold Medal.

**WATSON (F.), Nottingham.**

1859. 1st Year Student, Hon. Cert.;

Matriculation Examination—  
Physics, &c., Prize.**WAY (F. W.), Fratton, Portsmouth.**

1853. Descriptive Anatomy, Hon. Cert.;

Chemistry, Hon. Cert.;

1854. Midwifery, Hon. Cert.;

Surgery, Hon. Cert.

**WAY (J. P.), Portsmouth.**

1861. 1st Year, Hon. Cert.

**WEBBER (W. W.), Crewkerne.**

w 1876-7. 1st Year Student, 3rd Coll. Prize.

**WEBSTER (F.), Lee.**

w 1883-4. 1st Year Student, 1st Coll. Prize.

s 1885. 2nd Year Student,  $\frac{1}{2}$  2nd Coll. Prize.**WEBSTER (H.), Dulwich.**

1851. Matriculation Sch., Hon. Cert.;

Descriptive Anatomy, Hon. Cert.

1852. Botany, Hon. Cert.

1853. Midwifery, Hon. Cert.

**WEEKES (F. H.), Southampton.**

w 1873-4. 1st Year Student, 3rd Coll. Prize.

s 1874. 3rd Coll. Prize.

w 1874-5. 2nd Year Student, 2nd Coll. Prize.

s 1875. 3rd Coll. Prize.

w 1875-6. 3rd Year Student, 3rd Coll. Prize.

**WELLS (A. E.), Brixton.**w 1877-8. 1st Year Student, 2nd Entrance  
Science Scholarship.\* Deputy Inspector General of Hospitals,  
Imperial Japanese Navy.† Late Assistant Surgeon to, and Joint Lec-  
turer on Anatomy at, St. Thomas's Hospital.  
Late Member of the Board of Examiners,  
Royal College of Surgeons.‡ Assistant Medical Officer, County Asy-  
lum, Tooting, Surrey.

**WEST (J. F.)\***

1853. Midwifery, Hon. Cert.  
 1854. Forensic Medicine, Hon. Cert.;  
 Pathology, Hon. Cert.  
 1855. Ophthalmic Reports, Prize.

**WHEATON (F. D. W.), Honiton.**

1845. Practical Midwifery, Hon. Cert.

**WHEATON (S. W.), Battersea Park.**

- s 1885. 3rd Year Student,  $\frac{1}{2}$  1st and 2nd  
 College Prizes.  
 w 1885-6. 4th Year Student, The Mead  
 Medal.

**WHITEHEAD (E. T.), Battersea.**

- w 1886-7. 1st Year Student, 2nd Coll. Prize.  
 s 1888. 2nd Year Student,  $\frac{1}{2}$  2nd Coll. Prize.

**WHITEHEAD (J.), Preston.**

1861. 1st Year, Hon. Cert.  
 1862. 2nd Year Student, 3rd Coll. Prize.  
 1863. 3rd Year Student, 2nd Coll. Prize.

**WILES (J.), Hitchin, Herts.**

1850. Physiology, Hon. Cert.  
 1851. (Accoucheur) Midwifery, Prize.

**WILLIAMS (H.), Longley, near Gloucester.**

1868. 1st Year Student, 2nd Coll. Prize.  
 1869. 2nd Year Student, 3rd Coll. Prize.

**WILLIAMS (J.), Westerleigh, Bristol.**

1855. 1st Year Student, Scholarship;  
 Midwifery, Prize;  
 Botany, Prize;  
 Chemistry, Hon. Cert.;  
 Descriptive Anatomy, Prize;  
 Materia Medica, Hon. Cert.  
 1856. 2nd Year Student, Treas's 1st Prize.  
 1857. 3rd Year Student, Hon. Cert.  
 Gen. Proficiency, Treasurer's Medal.

**WILLIAMS (J.), Doncaster.**

1858. 1st Year Student, Hon. Cert.  
 1859. 2nd Year Student, Hon. Cert.;  
 Clinical Medicine, Prize.  
 1860. 3rd Year Student, Hon. Cert.

**WILLIAMS (P. H.), Modmouth.**

- s 1872. 1st Year Student, Hon. Cert.

**WILLIAMS (P. M. G.), Newcastle Emlyn.**

1864. Practical Midwifery, Prize.

**WILLIAMS (R. M.) Beaumaris.**

- w 1879-80. 1st Entrance Science Scholarship.

**WILLIAMS (W. R.),† Nottingham.**

1856. Matriculation Examination in  
 Classics, Mathematics, Hon. Cert.

\* Late Surgeon to Queen's Hospital, and  
 Professor of Clinical Surgery at Queen's  
 College, Birmingham.

**WILLIAMSON (R. J.), Ripon.**

- w 1876-7. 1st Entrance Sc. Scholarship.

**WINSTON (W. B.), Oxford Gardens.**

- w 1887-8. 1st Year Student, 2nd Entrance  
 Science Scholarship.

- w 1888-9. 2nd Year Student, 2nd Coll. Prize.  
 s 1889. 2nd Year Student, 1st Coll. Prize.

**WITHERBY (W. H.), Croydon.**

1853. Matriculation Examination in  
 Modern Languages, Prize.

**WOAKES (E.), Luton, Beds.**

1856. 1st Year Student, Hon. Cert.  
 1857. 2nd Year Student, 2nd Prize;  
 Clinical Medical Prize.  
 1858. Essay on Neuralgia, Mr. N. Smith's  
 Prize;  
 Surgery and Surgical Anatomy,  
 Chie-elden Medal.

**WOOD (G. J.), London.**

1863. Descriptive Anatomy, Hon. Cert.

**WOOD (R. H.), Loughborough, Leicester.**

1854. Descriptive Anatomy, Hon. Cert.  
 1855. Surgery, Hon. Cert.;  
 Midwifery, Prize;  
 Medicine, Hon. Cert.;  
 Descriptive Anatomy, Prize;  
 Physiology, Hon. Cert.  
 1856. Physical Society's Essay, Prize.

**WOODHOUSE (T. J.), London.**

1855. Chemistry, Hon. Cert.;  
 Materia Medica, Hon. Cert.

**WOODMAN (W. E.), Camberwell.**

- s 1875. 1st Year Student, 2nd Coll. Prize.

**WOTTON (H. G.)**

1855. Midwifery, Hon. Cert.  
 1856. Midwifery, Hon. Cert.

**WRENCH (E. M.), Cornhill.**

1851. Descriptive Anatomy, Hon. Cert.;  
 Physical Society's Essay, Treas-  
 urer's 1st Year's Prize;  
 1852. Physiology, Hon. Cert.

**WRIGHT (E. H.), Jersey.**

- s 1885. 2nd Year Student,  $\frac{1}{2}$  2nd Coll. Prize.

**WYMAN (C.), Putney.**

- w 1889-90. Silly Medal and Prize.

**WYMAN (W. S.), Kettering, Northampton.**

1852. Matriculation Examination  
 Scholarship.

† Late one of H. M. Commissioners in  
 Lunacy; late Resident Physician to Bethlem  
 Royal Hospital; late Lecturer on Mental  
 Diseases at St. Thomas's Hospital.

All old Students of St. Thomas's Hospital are requested to send their *present*  
 addresses to The Medical Secretary, *St. Thomas's Hospital, Albert*  
*Embankment, Westminster Bridge, S.E.*

